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## LABOR

### MINISTER COMMENTS ON LABOR BRIGADE METHOD

Moscow PARTIYNAYA ZHIZN' in Russian No 3, Feb 83 pp 11-17

[Article by V. Chudin, minister of construction, road and municipal machinebuilding: "Development of the Work-Team Method: Socioeconomic and Organizational Aspects"]

[Text] The widespread use of progressive forms of the organization of work, above all of work-team form, is an important condition for successful accomplishment of the economic and social tasks advanced by the 26th CPSU Congress. Work organized around the work team means a large saving of work time, optimum use of equipment, and people's faster occupational growth. Discipline is stronger in the work team, and personnel turnover is lower. A work team that is well organized and operates efficiently is, as we know, a true school for development of the managerial habits of the workers. The work-team method promotes an increase in the activity of the workers, whose importance was emphasized with particular force in the speech of Comrade Yu. V. Andropov, general secretary of the CPSU Central Committee, at the November (1982) Plenum of the Central Committee.

Work teams existed at plants even earlier, but they did not have that effective instrument of moral and material incentives for highly productive collective work with which they are armed at present. The present work-team method is based on the most up-to-date technology, and on higher worker skill, knowledge and awareness. One of its most important virtues is that it helps to enhance people's collective and personal responsibility for the results of their work.

The economic and social effectiveness of development of work-team forms of the organization of work and of work incentives has been confirmed by the operating experiences of many enterprises of the Ministry of Construction, Road and Municipal Machinebuilding. A sizable benefit has been achieved by consistent introduction of the work-team method, specifically at such plants as the Kalinin and Dmitrov Excavator Plants, the Korosten Road Machine Plant, the Minsk "Udarnik" Plant, the Chelyabinsk "Strommashina" Plant, the Slavyansk Construction Machine Plant, the Torzhok Firefighting Equipment Plant, the elevator-building plant and "Strommashina" in Mogilev, and the Rostov Production Association "Elektroinstrument." The vigorous activity of the work teams is to a considerable extent promoting the organization of operation of the branch at

an even pace. Planning targets as a whole are being fulfilled successfully, and in addition the entire growth of the volume of production is being achieved by raising labor productivity. The quality of the product produced is improving, and the turnover of worker personnel is dropping.

At the present time the enterprises in the branch have about 14,000 work teams in operation, embracing more than half of the workers. And their number is increasing. At the same time qualitative changes are taking place. There are more and more mixed work teams bringing together workers of different specialties. The proportion of work teams working under a single job order is rather high. But there is no basis whatsoever to be lulled by what has been achieved, since the problems of crediting wages according to the final results of work have not been fully solved as yet in all work teams, nor has cost accounting (khozraschet) been introduced in them. It should be said that the elements of cost accounting are being planned for a majority of work teams (the volume of production in quota-hours and team-aggregates, labor productivity, the wage fund, reduction of worktime losses, reduction of labor intensiveness). And this will help to instill in people the habits of compiling a plan and outgo, of creating possibilities for cost savings.

Experience shows that the more fully the work teams realize the potential capabilities of progressive forms of the organization of work, the better they promote inculcation of the communist attitude toward work. Wherever the work team is covered by a single job order, every man's contribution to the collective's achievements is strictly recorded, and there are practically no breaches of work discipline and production discipline. In this case the work team operates like a vigorous organizer of a drive to strengthen discipline, like a strict collective tutor who cannot overlook lateness, idling, and cases of drunkenness. After all, such breaches inevitably have an effect on the results of the common effort, on the welfare and disposition of all and everyone in the work team. There are quite a few collectives in the branch that are working with high productivity and are living a full-fledged creative life.

An example of effective application of the work-team organizational form of work in machine tool operations is shown by the work team of gear cutters in the machine shop of the Slavyansk Construction Machine Plant, a team headed by I. A. Kelyukh. It has nine members. And it has been in existence for 10 years now. In that time the number of machine tools attended by each worker has increased from 2 to 5-7, though the numerical strength of the team has not changed. The annual increase of work done has been 11 percent. Relationships based on friendship and helping each other out have arisen in the work team and have become stronger; each feels it is his duty to help his comrades both in carrying out the assignment and also in mastering an occupation. Recently the team leader I. A. Kelyukh was awarded the USSR State Prize for outstanding work achievements, for high production efficiency and workmanship, and for his large personal contribution to the creation of economical and productive machines and machinery. At the same time this was unquestionably a recognition of the merits of the entire team.

People become part of work teams covered by a single job order with differing feelings. Young people—almost without hesitation: after all, the skill of the older workers becomes more accessible to them under the new conditions. Sometimes the veterans are doubtful: Won't relations be impersonal in a large collective, won't they lose on their earnings? Every man should be attentively and responsively treated, in no case should the voluntary principle be violated in making up the work teams. There is an instructive example that can be cited in this regard.

A remarkable lathe operator V. I. Voznyy works in the machine shop of that same Slavyansk Construction Machine Plant. He has his own way of doing things, his own work methods. He makes extensive use of various attachments he has designed himself and with which he has overfulfilled technically sound quotas by 80-90 percent, whereas the other lathe operators exceed them by only 10-12 percent. On one occasion it was suggested to Comrade Voznyy that he enter a work team. "I don't see much point in that," he replied. Some sort of psychological barrier stood in the way of his taking that step. Time passed, the lathe operator looked on at what was happening around him. Gradually his attitude toward the work teams changes. The influence of I. A. Kelyukh, chairman of the council of work-team leaders, who talked with him more than once and convinced him also played a considerable role here. Now V. I. Voznyy heads a work team covered by a single job order consisting of 10 lathe operators. He himself shares his skill with the members of his work team. Industrious and disciplined himself, he is strict in what he expects of his comrades. And they take this in the right spirit. Output in the work team is growing from month to month. V. I. Voznyy's "secrets" have been studied in the plant school of progressive know-how.

The work-team organizational form of work is helping to involve in the management of production thousands of the most active, authoritative and skilled workers and is helping to develop in them a sense of being the bosses of their shop and plant. Especially good results are being achieved in this respect at enterprises where work-team councils and councils of work team leaders have been created and are in operation. These new managerial bodies have become an important form for the development of socialist democracy and are taking on ever more importance and assuming ever greater prestige in work collectives. Indeed at many plants not a single serious issue is resolved now without clearing it with the councils of work teams and work-team leaders. Everywhere they are gaining experience with the operation of these bodies.

In one of the best work teams of the Rostov "Elektroinstrument" Association--in the mixed start-to-finish cost-accounting work team of V. M. Kakurin--there is a five-member council. The council takes up practically all the important questions that arise in the life and activity of the work team, discusses the team's plans and targets, and concerns itself with conservation of raw materials and supplies. Largely thanks to the council's activity they managed to work out a clear-cut system in the work team for remuneration according to its final results, with a work participation coefficient used in the distribution of wages. This system has begun to be used in other collectives as well.

The council of work-team leaders is also doing fruitful work in that association. It has proven to be worthwhile to present at its meetings questions of the organization of work in performance of assignments at an even pace, in checking fulfillment of socialist obligations, in performance of measures for engineering support of the work teams, in the activity of work-team leader schools, and so on. The unfailing participation in the council's meetings of the director, the secretary of the party committee, the chairman of the trade union committee or their deputies promotes speedy and correct resolution of many problems raised by the work-team leaders. On the initiative of the council of work-team leaders schemes were developed in the association for production-technology relations among the work teams, which have helped to identify bottlenecks at the "interfaces" of the teams with neighboring collectives of their own and other shops. On this basis they have begun to conclude contracts on competition under the slogan "From Mutual Complaints to Mutual Aid."

Nor is it beside the point to emphasize that intraplant socialist competition has taken on an additional impetus since the work teams were founded and seems to have caught its second wind. The point is that with individual piece rates it is very complicated to organize effective work competition and to compare the results: there are too many participants and a great diversity of occupations. Sometimes this imparts elements of formalism to the organization of competition. Things are different with the work competition of the work teams. Here the criteria used as the basis for determining the winner and the ranking of the competitors are far simpler. At a number of enterprises they include fulfillment of the plan and socialist obligations; the quality of the product produced; reduction of the size of the work team against the standard allowance; the level of fulfillment of personal plans for raising labor productivity. Use of these criteria affords the trade union committee every opportunity to name that work team which is working with the highest efficiency.

An example of the creative attitude toward work and of active participation in socialist competition have been displayed by the mixed start-to-finish work team of the Kalinin Excavator Plant, a team headed by M. V. Lebedev. It was the initiator of a start-to-finish competition of work teams which have the same technological process in common. The initiative was supported by 27 other work teams on 4 production lines in the plant. The work teams employed on those lines were transformed into a single collective in which mutual rescue and comradely aid was guaranteed in difficult situations. The plant's engineering services were also involved in this competition. The highly conscious initiative of the workers has promoted improvement of the even flow of production and improvement of product quality. It is sufficient to say that acceptance on the first sample has risen to 99 percent at the plant.

Of course, there are still many difficulties and shortcomings in the evolution and work of the work teams which are in general inevitable in any new complicated effort. In some of them there has not been a noticeable rise of productivity and the quality of work, production does not flow at a more even pace, nor has the social-psychological climate improved. This means that essentially the work teams are living a formal existence. Their creation changed nothing in the organization of production nor in stimulating the achievement of high final results. Though rare, there are still cases when work teams

dissolve. For example, at the plant "Volgotsemmash" several such collectives dissolved in 1981. The reason, it turned out, lay in the fact that the peculiarities of human characters were poorly reckoned with in their formation and errors were committed in selecting work-team leaders. Later, to be sure, all the workers became members of the new work teams. We can achieve a high return from this progressive method only if we are fully aware of what is happening in every one of the collectives and what is standing in the way of their work.

Experience indicates that the new method is not taking root well in places where economic managers and specialists show little concern with the problems of the formation and evolution of the work teams, where they are not working smoothly enough. Something like that, for example, has happened at such plants as the Leningrad Excavator Plant, the Saratov Construction Machine Plant, and the Andizhan Irrigation Machine Plant.

Initiative from below, initiative of work collectives—that is what gave rise to the work-team form of organization of work and work incentives. It is expected to become the basic form in the current 5-year period. This task has been formulated in the decree of the CPSU Central Committee and USSR Council of Ministers on improvement of the economic mechanism. We should accordingly emphasize two factors important to practical work in the future. Only when it has become the basic and leading form in social production will the work-team form of the organization of work fully display its economic and social capabilities. But the effective transition to the work-team method can be accomplished only provided there is an extensive reorganization of the economic mechanism itself, including planning, material and technical supply, and the organization of production.

The most important job is to work out a clear-cut procedure for creating the work teams. Its basis is thorough engineering and economic preparation of production, which must be the concern of the relevant staff services of the ministry, of industrial and production associations, and of enterprises. At the plant, say, it is the staff service of the chief technologist which should speak first. It must reorganize the entire technology of production so as to take the work teams into account, raise the level of specialization in the shops and sections, and place the equipment optimally.

Sometimes it is necessary to convince not only the worker, but also the chief of the shop and sometimes even the enterprise director of the effectiveness of work-team forms of the organization of work and work incentives. I draw this conclusion not only from an analysis of information coming in from the field, but also on the basis of personal conversations on this topic with economic managers, party activists and work-team leaders out in the plants, for example, at the Kovrov Excavator Plant, at the Kharkov "Krasnyy Oktyabr'" Plant, at the Mogilev "Strommashina" Plant. Of course, none of the managers at those plants made any objection to the work-team method. But some comrades argued this way: Things have been going pretty well with us even with the old methods, it doesn't seem necessary to us to carry out a reorganization. Certain managers dragged their feet in introducing the work-team method because of

reluctance to make life more complicated for themselves with concerns about a sharp improvement of planning and the organization of production. After all, it is no secret that in a case of imposed idle time it is easier to justify oneself to people working individually than to a work team.

What can be said on this topic? All of us need to learn to look more fixedly toward tomorrow, which inevitably will impose new and higher demands. Success here depends in large part on the correctness of the position of the collegium and staff specialists of the ministry. The party organization also plays an important role in working out that position. In accordance with the decision of the party committee party members of all-union industrial associations and the ministry's administrations and departments have taken an active part in drafting the branchwide comprehensive target program entitled "Economy" and its subprogram "Work." The latter specifically provides for further development of work-team organizational forms of work.

The ministry's party members are making a solid contribution to development of the work-team method. Having previously studied the experience gained in this area at the Kaluga Turbine Plant, they have been persistent and consistent in their effort to introduce the work-team organizational forms of work at enterprises. It has been very worthwhile for them to give lectures and present reports on this topic to secretaries of shop party organizations and the ministry's propagandists and political information people. Activity of this kind is highly conducive to involving all staff specialists in the popularization and widespread introduction of the work-team method. Now development of work-team forms of work is being properly reflected in socialist obligations adopted by collectives of administrations, all-union industrial associations and the ministry as a whole. It is notable that all the supervisory personnel and many staff specialists take an interest in the problems of introducing this progressive method when they visit enterprises, regardless of the purpose of their visit.

Dissemination of work-team forms of organization of work and work incentives in the branch is being put on a planned basis. The specific features of the organization of production, the size of the production run, the diversity of manufacturing processes and the level already achieved are taken into account when assignments are given for coverage of the workers by the work-team method. Planning is also helped by the fact that mandatory statistical reporting on development of work teams was established in January 1982. The ministry assigns targets for introducing work-team forms of the organization of work to all-union industrial associations and production associations which are directly subordinate to it. The associations break down these targets to their subordinate enterprises and monitor their fulfillment. Progress in introducing work-team forms of work is regularly discussed in meetings of the ministry's collegium and in councils of directors. The staff of the Ministry of Construction, Road and Municipal Machinebuilding examines, revises and approves the methods recommendations, syllabi and curricula of interplant schools and seminars.

Dissemination of progressive know-how occupies a large place in the organizational work to develop the work-team method. For instance, the experience of

the best work teams and work-team leaders is treated in the "news bulletins" published by the Central Scientific Research Institute for Information of Minstroydormash [Ministry of Construction, Road and Municipal Machinebuilding]. This is studied in seminars of chairmen of councils of work-team leaders of plants, and the ministry's staff specialists make field visits and take part in seminars of chiefs of labor and wage departments. All categories of students of the Institute for Improvement of Qualifications of Minstroydormash are given lectures on the status and prospects for development of work-team forms of the organization of work, and the experience of progressive work teams is mandatory subject matter. In every one of the ministry's associations a base enterprise has been identified for introduction of work-team forms of work. In 1981-1982 interplant schools of work-team leaders were held at them.

Work-team leaders, as we know, play a crucial and useful role in the evolution and development of the work-team method. Many of them possess a great deal of experience in production, in their occupation and in life, and they display uncommon organizational abilities and show motivation and initiative in their work. I will name, for example, Yu. G. Tarakanov of the Gotvald Machinebuilding Plant, Yu. V. Gill of the Kiev "Dormash" Plant, V. I. Shaposhnikov of the Korosten Road Machine Plant. In their concern to disseminate work-team forms of work, enterprise directors and personnel of the ministry pay careful attention to the opinion of such people. At a meeting of the collegium of Minstroydormash recently held in Kharkov, statements made by work-team leaders V. A. Lazarev of the Kharkov "Krasnyy Oktyabr'" Plant and I. A. Kelyukh of the Slavyansk Construction Machine Plant, who has already been mentioned in the article, were heard with interest.

We should say that given the growing complexity of production and the diversity of the functions which are the work-team leader's responsibility and which require additional knowledge of technology and social pedagogy, plant managers are faced with the task of organizing training of work-team leaders and of a pool of people to replace them. A standard curriculum designed for 66 classroom hours has been worked out in Minstroydormash. It covers such topics as the work-team form of the organization of work; planning and recording the work of the work team; norm setting and organization of remuneration in a production work team; organization and technology of the principal production process in the work team; technical improvement of production and economics; workplace health and safety; and the elements of pedagogy and psychology.

The existence of a syllabus does not, it seems, solve all the problems of organizing the teaching process, since at the enterprise it is not always a simple matter to select lecturers, there are problems with methods materials and visual aids. It is clear that this effort is going forward, definite steps are being taken both in the field and in the ministry. Here again it would be good to put the question somewhat more broadly. The press, the radio and television are paying quite a bit of attention to this problem. Yet we expect in their articles and broadcasts a greater depth of analysis of the work-team method. It would be very worthwhile, for example, to have a specialized department entitled "To the aid of the work-team leader." It could be used to

present the elements of work norm setting, cost accounting of the work team, planning and recording production cost, the elements of general and industrial pedagogy and psychology, and other basic problems.

It would seem advisable to give thought to the question of strengthening the moral and material incentives of work-team leaders. Only regular attention to the work of work-team leaders, rather than attention paid from case to case, and high praise of their activity can be a definite form of moral incentive. Every year the results of the competition of production work teams are totaled up in a joint session of the ministry's collegium and the central committee of the trade union of workers of heavy machinebuilding, and the 100 winning work teams are determined. At the present time work is being done on the ministry to organize competition for the title "Best Leader of a Production Work Team of Minstroydormash." The management of enterprises and their public organizations have quite a few opportunities available for strengthening people's moral incentives.

It is more complicated to improve material incentives. But practice demands this. When the distribution of wages in proportion to the KTU [work participation coefficient] is introduced, the work-team leader has considerably more work to do; he must keep a record of the daily output of every member of the work team, record all the good points and bad points of his work performance, so that the KTU of every man can be soundly determined. Yet this is only a small part of his concerns. In our view the question should be taken up of increasing the supplement paid to the work-team leader for his leadership of the work team, which lies in the competence of USSR Goskomtrud [State Committee for Labor and Social Problems]. The question of supplements to the work-unit leader has long been waiting for a decision. It has to be taken into account that the work unit sometimes has as many as 10 members, and in a start-to-finish work team, say, the work-unit leader working on the evening or night shift is practically independent and performs almost all the functions of the work-team leader.

Definite steps toward further development of work-team forms of organization of work and work incentives have been worked out in a joint session of the collegium of Minstroydormash and the presidium of the central committee of the trade union of workers of heavy machinebuilding. Directors of enterprises and functional administrations of the ministers were set specific tasks. In particular, general directors and directors of production associations and enterprises must draft plans for introduction and improvement of the work-team form of the organization of work, making provision in them for analysis of production conditions, establishment of the organizational and technological boundaries of the effort, the content and scope of the work, the final result of the work of every work team, determination of the scheme of the production-technology interrelationship of the work teams, functional and auxiliary services, the training of work-team leaders, and so on. There is no doubt that the problems are complicated. And their solution requires persistent joint efforts by the management and by party and trade union organizations of enterprises.

Managers of the Kiev "Krasnyy Ekskavator" Plant, where large mixed start-to-finish work teams of machine tool operators were created back in 1969, have properly understood the importance of introducing the work-team method and have organized this effort. In this case we can speak boldly about a real contribution to solving an important problem of economic policy made by the plant's general director A. I. Kozlov, the chief engineer M. G. Shcherbakov, the secretary of the party committee I. K. Gudzya, and chairman of the trade union committee V. I. Danishevskiy. The plant's experience is instructive in many respects.

They drafted a special plan for introduction of the work-team organization of work, and they ordered the chief engineer to be in charge of its fulfillment. Methods supervision and followup on the performance of the measures outlined were made the responsibility of the labor and wages department and the production department, which have now been joined by the newly created scientific management laboratory. During the preparatory work a new layout for location of equipment was made in a number of shops. The purpose was to promote introduction of multimachine attendance, reduce unproductive expenditures of work time in the movement of workpieces. Specialized sections were created for manufacturing particular types of products. The work team was assigned a group work station and a specified amount of work in a technologically rounded off part of the product (assembly units or set of parts). Wage systems were worked out and introduced that guarantee collective and personal interest in the final result. The organization of production, of the planning and recording of work and work norm setting were reevaluated.

In order to guarantee that production flows at an even pace the work of the teams is organized according to a daily schedule at the plant. Their monthly assignments, when totaled up, comprise the plan of the shop; in this case nonfulfillment of the plan by even one work team causes nonfulfillment of the plan by the shop. This tends to increase the responsibility of economic managers and engineering and technical personnel and to arouse their interest in the results of the activity of every work team. At the present time 98 percent of the workers at "Krasnyy Ekskavator" are members of work teams.

When we speak about ways of developing the work-team method in the branch as a whole, we consider the most important task to be the transition from individual work teams to the organization of mixed collectives along the production chain, for which the single end product would be the standard by which work was measured. We have in fact had such experience. For instance, the work of five work teams of the initial processing shop of the Ivanovo "Avtokran" Plant, which have consistently performed all the work operations involved in the initial processing of the extensible boom, is planned and remunerated according to the number of boom sets delivered to the warehouse. This arouses people's greater interest in the performance of those they work with, motivates the work teams to help one another, helps to improve product quality and eliminates the possibility of padding reports.

There are plans for the work teams we have been discussing to play an important role in preparing for introduction of a higher level of the organization of production--the comprehensive system for enterprise management on the basis

of the work-team method, with payment for the end result after the experience of the Kaluga Turbine Plant. The elevator-building plant and "Strommashina" Plant in Mogilev have been designated base plants for introduction of this experience in the branch. We regard this fundamentally new level of management of production and of planning and economic work the main thing in the comprehensive system for enterprise management on the basis of the work-team organization of work. The system is expected to ensure straightforward interaction of all management entities with the work teams. It is helping considerably to increase the economic efficiency of production, to raise product quality, and to create a positive social-psychological climate in collectives. That is why its introduction is becoming a common effort of economic managers, all engineering and technical personnel, and party and trade union activists in the branch.

We see further improvement of work-team forms of organization of work and work incentives as an important pledge to the branch's successful fulfillment of the instructions of the November (1982) Plenum of the CPSU Central Committee and the assignments of the crucial third year of the 5-year plan.

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## LABOR

### LABOR'S ROLE IN PRODUCTION INTENSIFICATION UNDERSCORED

Moscow EKONOMICHESKIYE NAUKI in Russian No 2, Feb 83 pp 22-30

[Article by K. Ulybin, candidate of economic sciences: "Toward Speeding up Intensification of Social Production and the Rise of Its Efficiency"]

[Text] The 26th CPSU Congress, which thoroughly analyzed the patterns of our society's development in the present stage, set the task of completing in the eighties the economy's transition to a predominantly intensive mode of development. The problems of intensification of production and production efficiency have now taken on the significance of economic policy: these are factors determining the socioeconomic progress of a mature socialist society. Even in the current 5-year period, the 11th, a very sizable growth is to be achieved in the share of intensive factors in our country's economic growth and that share is to be raised to almost 50 percent in line with the available calculations of the scientists.<sup>1</sup>

Achievement of those targets is a very large and complicated task. The objective prerequisites of production intensification have fully matured, the need for it is being felt ever more acutely every year, and yet "the transition of our economy to that pattern, the turn toward efficiency," Comrade Yu. V. Andropov, emphasized at the November (1982) Plenum of the CPSU Central Committee, "are still taking place slowly."<sup>2</sup> The efforts of economic science and practice must now be directed toward a determined acceleration of the rates of comprehensive intensification of the national economy.

The results of these efforts have to be realized even in this current year of 1983, the middle year of the 11th Five-Year Plan, which in many respects determines its final result. Now "major and to a considerable extent new tasks have been set," Comrade Yu. V. Andropov emphasized. "in all areas of economic and social progress."<sup>3</sup> Their successful fulfillment in 1983 will make it possible to consolidate and considerably develop the success which has been achieved and to create good prerequisites for a real achievement of those targets outlined in the plan for the 11th 5-year period. In 1983 not only must a certain drop in economic growth rates that occurred earlier be overcome, but they must even be raised substantially. For instance, in 1983 the growth of the national income will be nearly 1.7-fold faster than in the previous year. Industry, especially such leading branches of it as machinebuilding, the chemical industry, the gas industry and a number of others, will be pacesetters in

development. The volume of agricultural production must increase by 10.5 percent.

As is well known, under socialism economic development, for all its tremendous importance, is not an end in itself. It is ultimately subordinated, as has been specifically pointed out at the 26th CPSU Congress, to the steady rise in the material and cultural level of living of the Soviet people. That is why the State Plan for the USSR's Economic and Social Development for 1983, as well as plans of previous years, paid paramount attention to the rise in the prosperity of the people. A 3-percent increase in per capita real income was provided for and a 4-percent growth of social consumption funds. The output of the branches in Group B will increase relative to Group A, just as occurred in the previous years of the 11th Five-Year Plan (3.5 and 3.1 percent, respectively). In this connection there will be a notable expansion of the assortment of consumer goods, and their quality will improve. On that basis there will be a 5.4-percent increase in the volume of retail commodity turnover, which will promote fuller satisfaction of the demand of the public for various goods. Housing construction, as in the past, will be conducted on a broad scale: the country's workers will receive 106.6 million square meters of residential floor space in 1983. The wages of workers and employees and remuneration of kolkhoz members are being raised further, and other measures are also being taken to improve the life of the Soviet people. Thus "concern about the Soviet man, about the conditions of his labor and everyday life, about his nonmaterial development, remains the most important programmatic principle of the party."

The main peculiarity of the present stage of economic growth, which is taking place in the context of the transition to a predominantly intensive mode of economic development, lies in the fact that further comprehensive socio-economic progress must be achieved with a comparatively smaller increase in physical and labor resources. For instance, whereas the plan calls for the national income to increase 3.3 percent in 1983, capital investments are to rise 3.2 percent and the number of workers and employees 0.4 percent. Given this relationship between the results and the resources applied, achievement of the planned target is possible only on the basis of a substantial rise in production efficiency and a speeding up of the intensification of production.

The rise of labor productivity cannot but have a central place in faster accomplishment of the transition to intensification. Under present-day conditions another reason for its extremely large role is that we possess almost no sources of growth of labor resources. The labor force participation rate of the able-bodied population in the country as a whole is approximately 92 percent, and in a number of regions this figure is still higher. We cannot but take into account that the CPSU and Soviet Government, guided by the fundamental socioeconomic goals of our society, are taking major steps to create the best conditions for bringing up children in the family, in particular by granting mothers additional opportunities, including paid leave, to be at home. Only a stable and sizable rise of labor productivity can be a sound basis for our country's successful performance of its tasks under the conditions that have come about. In 1983 its increase has been set at a level higher than 3 percent; that kind of increase will make it possible to conserve the

labor of 3.3 million persons and will be the source for obtaining 95 percent of the growth of the national income. The growth rates of labor productivity in 1983 will speed up substantially over the previous year. Strenuous targets have been set here, but they are altogether realizable when the real unused potential is taken into account. A further rise in the level of mechanization and displacement of manual labor have very great importance to guaranteeing the required rise of labor productivity and, moreover, for performing the entire program of our interrelated socioeconomic tasks. Broad application to production of automatic manipulators (robots) with program control will support radical changes in this area. In 1983 their output will increase 1.8-fold and will amount to 7,700 units. Their production will continue to grow at the same high rates in the future. It has been calculated, for example, that if robots are correctly used, by 1990 they will be able to replace 1 million workers and will yield a saving amounting to about 3 billion rubles per year.<sup>5</sup>

There is a large potential for a saving on manual labor in auxiliary production, where the level of mechanization is only 29 percent. Unfortunately, many managers in the economy underestimate this important source of additional manpower and further development of the worker's personality. The bulk of the funds allocated for mechanization (about 80 percent) are still going into the principal production operation.<sup>6</sup> Now a comprehensive target program for development of the mechanization and automation of materials handling, loading and unloading and warehouse operations is being drafted by the appropriate departments on a centralized basis. Its fulfillment in the 11th Five-Year Plan alone will make it possible to reduce the work force engaged in these operations by 14 percent.<sup>7</sup>

Another important potential for raising labor productivity is reduction of work time losses, which at certain enterprises go as high as 20 percent. There has been success in recent years in achieving a notable reduction of these losses. Nevertheless, they are still very sizable. Merely cutting them in half would make it possible to raise labor productivity in industry by 5-6 percent and to increase output by 30-36 billion rubles. Improvement of the organization of production and the organization of work and raising work discipline are very effective in eliminating work time losses.

The setting of scientifically sound work quotas could become an effective instrument for raising labor productivity. For instance, at the Gomel Measuring Instruments Plant 200-300 workers every year submit declarations to raise their output quotas, which makes it possible to reduce the labor intensiveness of the product by 40,000-45,000 quota-hours. But this work is not organized that effectively everywhere. In 1981 only one out of every six quotas in industry was revised, and at enterprises of Minpishcheprom [Ministry of Food Industry], for example, only 1 percent of the quotas were revised.<sup>8</sup> This work is manifestly underestimated, though quite a bit of experience has been gained in the country in performing it, and effective economic incentives have been worked out. For instance, at the Aksay Plastics Plant, while the quota has been raised 10 percent, workers are paid bonuses in the amount of 50 percent of the amount saved.<sup>9</sup> Enterprises have now been granted the right to introduce higher piece rates—up to 20 percent—for workers who adopt progressive

quotas and to apply larger supplements to wage rates and salaries for combining occupations and for fulfilling assignments with fewer workers.

It also seems appropriate to speak about the need for more thorough theoretical study of the question of the role of labor productivity in speeding up production intensification. Attention should be paid here to working on both the qualitative and also quantitative connections and relationships. We suppose that it is not possible to agree with all the principles encountered on this topic in the literature. For instance, it is not uncommonly asserted that since labor productivity is the most important and summary indicator of intensification, the level of the latter should be immediately and directly evaluated according to the share of the growth of the national income achieved on the basis of raising labor productivity. This can hardly be recognized as a sound approach. Its lack of promise from a practical standpoint seems obvious: after all, if the logic of this position is followed out, one must conclude that the task of production intensification does not even exist in essence, since it has been solved in the past, when the growth of the national income was mainly achieved by raising labor productivity.

To go further, we cannot but take into account that the development of production can be accomplished not only by saving on live labor, but also thanks to more efficient use of past labor. Since expenditures of this labor predominate in the production cost (about 80 percent in industry), saving on this labor yields a very large benefit. It is sufficient to say that reducing physical inputs in the national economy by 1 percent is now equivalent to raising the national income by approximately 7 billion rubles. But that is not all. Conservation of physical inputs makes it possible to accomplish important structural changes in the national economy. Even though the state is now spending very large and ever growing resources to develop the extractive industries, it is not always succeeding in fully meeting the requirement of materials-intensive production. Sometimes incompatibilities occur in development of the raw materials and processing branches, to which attention was turned at the November (1982) Plenum of the CPSU Central Committee. Under the conditions of intensification more efficient use of the output of the extractive branches is the most optimum solution of this problem. Specialists believe that a saving of 5 billion rubles on physical resources guarantees a reduction of 30 billion rubles of capital investments in the raw materials and extractive branches.<sup>10</sup> These resources could be committed to technical reconstruction and development of many branches of the manufacturing industry and can serve as a source of their effective restructuring in the direction of production intensification.

In speaking about conservation of physical resources it is important to bear in mind that the total costs of conserving one unit of these resources are between one-third and one-fifth as large as the costs of producing them. And in the future this gap will widen because the raw material bases are moving further away from the manufacturing points and the conditions of the mining geology of extraction are becoming worse.<sup>11</sup> The inevitable conclusion is that it is advisable to transfer the emphasis in the effort to combat the shortages of a number of raw materials from the sphere of their production to the sector in which they are consumed. We will also note that our inputs of resources

(raw materials, supplies, fuel, energy, etc.) are still high in many cases compared to other highly advanced industrial countries and are dropping slowly. The main reason for this situation, in our opinion, is that the economic mechanism is still not orienting production collectives with the force it should toward conservation of resources. Many officials of ministries and enterprises have not actually overcome yet the conceptions of the past, when the problem of furnishing physical resources to the sectors of the economy was not as urgent as it is now. At the November (1982) Plenum of the CPSU Central Committee Comrade Yu. V. Andropov emphasized: "The question of conservation of physical resources should now be looked at in a new way, and not after the pattern 'conservation is a good thing, but one can get by without it.'" <sup>12</sup> An indifferent attitude toward the problems of the materials intensiveness of production is now altogether intolerable, and conservation of all resources is not merely desirable, but is indeed strictly mandatory as an unconditional economic necessity. There is accordingly a need for a substantial improvement of the entire work of planning, organizing and stimulating the conservation of supplies, raw materials and energy resources.

Particular attention must be paid to setting standard allowances on physical resources. So far scientifically sound and strenuous standard rates of consumption have not been worked out everywhere nor for all types of resources. That is why assignments for conservation of physical resources by enterprises are at present set "by eye," which manifestly does not orient them toward a more intense effort to mobilize unused potential. For instance, 10 out of 15 enterprises of USSR Minchermet [Ministry of Ferrous Metallurgy] which were checked had excessively high standard rates of consumption of fuel and thermal energy; the ratio at enterprises of Mintsvetmet [Ministry of Nonferrous Metallurgy] was 33 out of 73, and in Minlegprom [Ministry of Light Industry] it was 56 out of 117. <sup>13</sup>

Not uncommonly the result of the lack of sound standard rates of consumption of resources is that the targets for their conservation assigned to enterprises are not distinguished by stability and the necessary concreteness. As a result of the vagueness of these targets enterprises with good performance and those with poor performance end up in the same position. And not uncommonly the conservation of resources by the former later results in an unjustified reduction of those resources, a reduction that does not allow them to normally fulfill production plans and product deliveries.

On behalf of a more effective effort to conserve resources there is a need in our view to establish strenuous, but stable (say, for 3-5 years) standard allowances for all types of resources. Ministries would use them as a basis for allocating to enterprises scientifically sound limits of inputs of physical resources which would be stable for a number of years. Adherence to those limits must be guaranteed by a system of effective incentives. Half of the total saving of resources against the limit, say, might go to the enterprise's economic incentive funds. Conversely, an overexpenditure of resources over and above the limit should entail strict economic penalties. In our view we might discuss as one such alternative the possibility of doubling, tripling or increasing even more the level of release prices on that portion of raw materials, supplies and energy resources expended over and above the limit--without, of course, changing the sales prices. Another possible variant is for

the overexpended funds to be reimbursed from economic incentive funds and the wage fund. One thing is beyond question: enterprises' nonfulfillment of sound targets for conservation of raw materials, supplies and energy resources may not go unpunished. Since the proposed conservation of resources is set down in the plans of the enterprises, nonfulfillment of the relevant targets brings about disproportions in the national economy. "Conservation, a thrifty attitude toward the people's property," Comrade Yu. V. Andropov remarked at the November (1982) Plenum of the CPSU Central Committee, "is now a question of the realism of our plans."<sup>14</sup>

Higher targets for conservation of raw materials, supplies and energy have been set for 1983 and for the entire 5-year plan. Conservation is supposed to cover approximately 40 percent of the increase of the country's needs for fuel, rolled products of ferrous metals and cement.<sup>15</sup> This problem is altogether soluble, but there is a need here to eliminate the losses that exist, to achieve combined and thorough processing of raw materials, to introduce technologies that conserve materials, to improve the proportions among materials used in construction and design and to apply new and more economical types of materials. It is also quite important to ensure more complete use in the economy of secondary resources and production waste. For example, a ton of steel melted from scrap cost between one-fifteenth and one-twentieth as much as a ton produced by the usual method.<sup>16</sup> It is also highly efficient to produce other types of materials from secondary resources.

Intensification of production and the rise of production efficiency are possible only on the basis of the most progressive and up-to-date technology. One of the ways of realizing the advances of science and technology in production is to manufacture new and progressive products, which is assuming especially great importance for the technical retooling of many branches. It is not merely new machines and equipment which are needed to accomplish this, but they must also be highly efficient. The problems of modernizing the product deserve all the more attention because so far the rate at which they have been solved cannot be regarded as satisfactory.

About 20,000 new pieces of technology are to be put into production in the country during the 5-year period. This is, of course, quite a bit, but it is inadequate from the standpoint of the requirements of present-day scientific-technical progress. That is why the relative share of outdated products is not only not dropping as it ought to do, but at present it is still rising. For instance, the share of products which have been manufactured for more than 10 years was 30.6 percent in the 11 machinebuilding ministries in 1981, whereas in 1967 it was only 16.2 percent.<sup>17</sup> The main reason for this is that enterprises are still reluctant to include highly efficient new products in their plans. How is this situation to be overcome? It would seem advisable to assign to enterprises a 5-year quota for renewal of products (with a breakdown by years) and to include this in the state plan. Moreover, when the quotas and periods of time for renewal of products are set, the orientation should be toward the progressive advances of Soviet and world practice. It is equally important when contracts for delivery of new products are concluded to give a definite priority to customers and consumers of new products. At present their situation is such as not to allow them to effectively insist on the

production of the most efficient products which they need. It is self-evident that as the direct impact of the plan on suppliers of new products is intensified and as the position of consumers of new products is decisively strengthened, the need for stable economic incentives for all participants in the process of production and use of new technology cannot be forgotten.

The low efficiency of new technology is a fateful problem requiring rapid solution. It has been repeatedly noted that the inadequacy of the growth of the benefit from applying new technology is compounded by the unjustified rise of prices for that technology, increases that exceed the rise of efficiency.<sup>18</sup> Under such conditions use of new products not only does not improve the results of the economic activity of the consumers, but on the contrary is detrimental to them.

At the present time, when the task has been set of greatly speeding up the process of intensification, it is obvious that only that technology which ensures not only a sizable rise of efficiency, but also a drop in the unit price of the useful benefit, can claim the right to be put into production. In our view it would be advisable to establish a kind of lower limit as to the efficiency of the new product to be manufactured. This would make it possible to shut off access to production of products with low efficiency and to substantially raise the requirements which manufacturers must meet. Much should be done here in the pricing field. Under present conditions it is not as yet adequately serving to stimulate the production of the truly new product. At present prices are set in such a way that in essence they prove to be beneficial for development and disadvantageous for those which are highly effective. The main reason for this situation lies in the fact that as before prices are set on what is referred to as the cost basis. Yet experience shows that this is by no means the best solution of the problem.

In the situation that has come about the functions of stimulating the production of highly efficient new products are mainly being placed on the supplements to prices assigned to this purpose rather than on the price as such. This unjustifiably reduces the role of the price in stimulating scientific-technical progress. A clear-cut functional dependence needs to be achieved: When the benefit is high, the price would also be high. In addition, it is advisable to set prices so that they are lower per unit of use value manufactured. Perhaps a specific coefficient for lowering the price per unit of the useful benefit should even be introduced into the pricing model.

Of course, the problems of pricing are very complicated. That is why it is so important here to seek new solutions that take into account past experience, but are not limited by it. Thorough development of scientifically sound conceptions of pricing should be based on creative application of Marx's theory of the dual character of labor and value, applied to the present-day conditions of advanced socialism.

Pricing is, of course, only one of the parts of the economic mechanism in need of serious improvement. The fact that it is not fully adjusted has to be seen as the main reason why many workers still have little desire to increase the efficiency of their activity. The objective conditions of the economy of a

socialist society, especially in the stage of advanced socialism, are such that the workers have every basis for doing good work and for working productively, for displaying stewardly resourcefulness and initiative, and for seeking out and introducing everything that is new and most progressive. But these objective conditions are not realized automatically; their implementation requires comprehensive, effective and sound measures of economic policy. One of the central principles advanced by the November (1982) Plenum of the CPSU Central Committee is that it is necessary "to speed up the effort to improve the entire sphere of guidance of the economy—management, planning and the economic mechanism."<sup>19</sup>

In this connection we first of all cannot but turn attention to the need for faster performance of the system of measures envisaged by the decree of the CPSU Central Committee and USSR Council of Ministers dated 12 July 1979 and entitled "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality." There are still ministries, associations and enterprises which have so far limited themselves to introducing only certain piecemeal innovations set forth in that decree. We cannot but note that quite a few efforts have been made to introduce the indicator of normative net output (NChP). This is, of course, a good thing. But in and of itself the indicator NChP cannot be a universal means of solving all the problems that have become urgent. First of all, it has to be taken into account that the indicator NChP reflects changes in production only in value terms, and even then not completely. It is difficult and practically impossible to use it for a judgment as to the extent to which the product produced meets the specific requirements of society or to judge its quality. The situation is quite realistic in which the volume of the NChP is very high, but is embodied, say, in outdated machines with low efficiency. It is clear that a growth of this kind does not correspond to the goals of our economy's development.

Second, the indicator NChP, like any other indicator, is subject to the most varied changes under the impact of a large number of diverse factors. While being fully aware that it is now advisable to use this indicator, then, it should be clearly seen that it will yield the necessary benefit only when it is organically merged with the entire system of measures that have been devised to improve economic performance. To realize any of the elements of this system in isolation, including use of the indicator NChP, will not yield those results we are legitimately counting on and which we must achieve.

How are we to get away from footdragging and halfway measures in implementing the solutions which have been adopted to improve the economic mechanism? Once again this problem is not solved through any sort of one-time action that possesses full and universal effectiveness. Introduction of the system of progressive measures requires that scientific procedures be used in implementing it. In this connection we cannot but turn attention to the advisability of extensive use of target-program methods, which have recommended themselves. Such programs would define in clear-cut terms what the innovations are, when and where they are to be introduced, by whom, in what sequence, and to what extent. It is clear that these programs, like other programs, will be useless if effective monitoring of their accomplishment is not set up, if the

available know-how is not summarized, and if the appropriate adjustments are not made on the basis of that experience.

While emphasizing the extremely great importance of carrying out the set of interrelated measures which have already been worked out to improve the guidance of the economy, we should at the same time take into account that they cannot be effective for an arbitrarily long time and that consequently they must be developed, supplemented, and amended as life goes forward. The economic situation is undergoing renewal, new tasks and problems are arising. Not everything that was fully acceptable yesterday is desirable in our life today. This principle, which reflects the dynamism and mobility of the economic organism, belongs among those very few truths which are always valid. We can cite as an example of this that at present the impact on intensification is mostly being exerted indirectly, mainly through the efficiency of use of individual resources, and indeed even in this effort by no means all the opportunities have as yet been utilized, as to some extent we spoke about above. The party is now setting the task of accomplishing the comprehensive transition of the economy to the intensive mode, and that task can be performed only in every aspect at the same time, and moreover at all levels. Yet many managers in the economy still do not have a clear idea of the kind of share which the intensive factors of growth have in the units of the economy they head. Calculations of this kind are for all practical purposes not made, yet without them the problems of accentuating intensification cannot be solved with the necessary purposiveness. It is obvious that under present-day conditions there is an urgent need to equip the managers of associations and enterprises with the appropriate methods of calculating the share of intensive growth factors and of setting forth in plans specific assignments for increasing that share. In meeting this necessity there is also much that must be done by economic science, which has not yet worked out clear and generally accepted bases for devising methods of that kind.

Among the problems of economic performance which need a more convincing solution, a solution that fully takes into account present-day conditions, we cannot but mention the strengthening of the independence of associations, enterprises, kolkhozes and sovkhozes. Attention was turned to this aspect of the matter in the speech of Comrade Yu. V. Andropov at the November (1982) Plenum of the CPSU Central Committee. "Recently," Comrade Yu. V. Andropov said, "there has been quite a bit said about the need to expand the independence of associations and enterprises, kolkhozes and sovkhozes. It would seem that the time has come to undertake in a practical way to solve that problem."<sup>20</sup> Recently the process of socialization of production has been developing rapidly in the country; large associations are being created in industry, agriculture and other spheres of activity. By the beginning of 1982 the industrial sector had in operation 4,144 production and scientific-production associations, accounting for about 50 percent of marketed output.<sup>21</sup> But there has been little change in the character of relationships of these large-scale production-economic entities with superior economic authorities.

Up to now the associations have been deprived of the necessary independence in applying the various means which are at their disposal and in using the resources they possess. This naturally restricts opportunities for accomplishing maneuvers in economic activity. There is still a flood of instructions

and orders from superior authorities on secondary matters which ought to be dealt with locally, where the necessary conditions obtain for doing so. It is obvious that a large part of the explanation for this lies in the fact that the superior authorities, in issuing instructions, which incidentally are not always successful, do not in essence bear economic liability for the results of their performance. The "division of labor," in which decisions are made by one set of parties, while responsibility for the results brought about by those decisions, is borne by another set of parties, cannot be favorable to attainment of economic success. The situation is worsened by the fact that supervision over activity is exercised in various aspects by a large number of organizations which often belong to different departments and issue contradictory instructions. All of this complicates the effort unjustifiably, stands in the way of concentrating on the main thing, of showing initiative, and of finding effective new solutions that are out of the ordinary. It is logical to suppose that this largely explains the poor development as yet of the process of specialization, cooperation and improvement of the organizational structure and management structure within associations.

At present there are many things which are unclear as to what kind of relations should prevail in the vertical direction in the sphere of economic activity. Economic science is as yet paying little attention to these matters. It seems beyond doubt that dealing with them requires further study of the relations of socialist ownership, especially the applied aspects of this problem as manifested in the economy itself. General and abstract arguments are not very fruitful here, as experience has shown, since in essence they do not go outside the limits of conceptions which have been fully shaped.

On behalf of carrying out the instructions of the November (1982) Plenum of the CPSU Central Committee on expanding the independence of economic entities, it would not in our view be a bad thing, first, to see about minimizing the flow of all kinds of orders and instructions which superior authorities issue to enterprises and economic entities. It is desirable to reduce supervision of the activity of associations and enterprises to a restricted number of input and output parameters. After all, the enterprises being required above all to fulfill planning targets on time with minimum inputs of resources. Consequently, it is these parameters that need to be specifically monitored. Other matters should evidently be mainly in the competence of the associations and enterprises. How to go about it and what should be done to fulfill these basic targets, how the available funds and stocks should be used—all that should be decided by the associations and enterprises themselves. Within the limits of the main parameters it would be advisable to grant them broad opportunities for accomplishing maneuvers in the conduct of their economic activity. Such steps would not weaken, but would on the contrary strengthen socialist planning and the role of the country's sole economic center: after all, this role is not determined by the number of actions taken, but by their effective realization. Second, it would seem to be wise to make provision for a certain economic responsibility of agencies administering the economy in cases when they impose on enterprises erroneous decisions which bring about losses both for the enterprises and for society as a whole. Rights need to be closely allied to responsibility.

In the effort to expand the independence of enterprises, organizations and economic entities it is also important to take into account that this is no simple matter at all. As emphasized at the November (1982) Plenum of the CPSU Central Committee, action in this area should be perspicacious and astute. Experience shows that strengthening independence when economic relations have not been adequately regulated could result in disproportion and could slow down the rise of efficiency, i.e., could have results opposite to those assumed. That is why actions in this direction must be combined with a precise orientation of economic entities toward achievement of society's needs, with growing interest of all entities of the economy in highly efficient and quality performance, and with increased responsibility for the results of that effort.

Speeding up production intensification and increasing production efficiency depend in large part on how fully all enterprises and economic entities will in their activity take into account the final results from the standpoint of the national economy rather than intermediate results, gross output. Experience has confirmed more than once how wrong it is in our time to equate the development of production with any quantitative growth. At this point it is shortsighted to rely solely on rates and volumes without taking into account what they cost and what stands behind them. There is no longer any need whatsoever to prove that producing a product over and above the necessary requirements or a product that does not meet the requirements or a substandard product, holds back economic development and also imposes unnecessary costs. When all this is so, why is it that the attitude based on gross output and the related principles of economic performance have not yet been fully overcome? It is sometimes felt that the "orientation based on gross output" is a consequence of the manifestation of adverse aspects of certain indicators, mainly value indicators. But this is hardly true. After all, the "gross" is an attitude that adapts quite well to physical indicators as well. Probably we are still dealing here with the stereotype of an oversimplified approach, when an effort is made to encompass all the real changes in diverse economic life by means of maximum restrictions on the number of indicators. In reality the results of production under socialism can be fully and correctly reflected only in a strictly balanced system of physical and value indicators. Underestimation of either the one or the other ultimately gives rise to adverse phenomena.

Comrade Yu. V. Andropov specifically emphasized at the November (1982) Plenum of the CPSU Central Committee that the main criterion in evaluating the performance of branches and enterprises must be the degree of satisfaction of the constantly growing needs of society.<sup>22</sup> Indicators cannot conceal real life. It is always broader and richer than the most perfect indicators. The latter are all the more useful and effective the more fully they reflect in their aggregate all the aspects of the many-sided life of the economy.

Production intensification under socialism depends directly on the level of performance of all workers, who are full-fledged coproprietors (sokhozyayevy) of the wealth belonging to the people as a whole. "That feeling of being an active creator of one's own life and one's own society," Comrade Yu. V. Andropov emphasized at the ceremonies devoted to the 112th anniversary of the birth of V. I. Lenin, "embodies that formidable force which no system but socialism

has or can have. Possessing that force, consistently developing it and astutely guiding it, we will solve all the problems and advance still more vigorously the great cause of building communism."<sup>23</sup> The vigor of the broadest masses of workers constitutes the inexhaustible source of development of the socialist economy and the basis for performing all its tasks, including such important tasks as implementing the USSR Food Program up to the year 1990, which was approved by the May (1982) Plenum of the CPSU Central Committee, and those everyday tasks which face every work collective and individual worker.

The November (1982) Plenum of the CPSU Central Committee has set large and complicated tasks for all the Soviet people. Performing them with maximum success and at maximum speed, as noted at the 26th CPSU Congress, is today possible only on the basis of faster intensification of social production and higher production efficiency.

#### FOOTNOTES

1. A. Aganbegyan, "A Key Factor of Growth," PRAVDA, 24 February 1982, p 2.
2. "Materialy Plenuma Tsentral'nogo Komiteta KPSS, 22 Noyabrya 1982 goda" [Materials of the Plenum of the CPSU Central Committee on 22 November 1982], Moscow, 1982, p 8.
3. Ibid., p 22.
4. Ibid., p 7.
5. EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA, No 2, 1982, pp 30-31.
6. PRAVDA, 17 March 1982, p 3.
7. N. Ryzhkov, "Certain Aspects of Planned Management of the Economy," PLANOVOYE KHOZYAYSTVO, No 8, 1982, p 4.
8. PRAVDA, 1 November 1982, p 1.
9. EKONOMICHESKAYA GAZETA, No 16, 1981, p 7.
10. EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA, No 4, 1981, p 16.
11. For example, in 1950 the iron content of iron ore averaged 50 percent, in 1980 it was 35.1 percent (PLANOVOYE KHOZYAYSTVO, No 10, 1982, p 104).
12. "Materialy Plenuma Tsentral'nogo Komiteta KPSS, 22 Noyabrya 1982 goda," pp 10-11.
13. EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA, No 11, 1982, p 5.
14. "Materialy Plenuma Tsentral'nogo Komiteta KPSS, 22 Noyabrya 1982 goda," p 11.

15. PLANOVOYE KHOZYAYSTVO, No 8, 1982, p 8.
16. "Current Problems in Economics of Natural Resource Conservation," VOPROSY EKONOMIKI, No 2, 1982, p 91.
17. PLANOVOYE KHOZYAYSTVO, No 10, 1982, p 5.
18. See, in particular, "Sistema upravleniya ekonomikoy razvitogo sotsializma: tendentsii i problemy" [The System for Management of the Economy of Advanced Socialism: Tendencies and Problems], edited by P. G. Bunich, Moscow, 1982, p 106.
19. "Materialy Plenuma Tsentral'nogo Komiteta KPSS, 22 Noyabrya 1982 goda," p 8.
20. Ibid., p 9.
21. PLANOVOYE KHOZYAYSTVO, No 11, 1982, p 37.
22. "Materialy Plenuma Tsentral'nogo Komiteta KPSS, 22 Noyabrya 1982 goda," p 17.
23. Yu. V. Andropov, "Leninism—An Inexhaustible Source of Revolutionary Energy and Creativity of the Masses," address delivered at the ceremonies in Moscow devoted to the 112th anniversary of the birth of V. I. Lenin, PRAVDA, 23 April 1982.

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## LABOR

### SELECTED ARTICLES ON AGRICULTURAL LABOR, WAGES

#### Sovkhoz Manpower Problems Discussed

Sverdlovsk URAL'SKIYE NIVY in Russian No 8, Aug 82 pp 16-17

[Article by G. Demidov, head of the political economy department of the Sverdlovsk Agricultural Institute, assistant professor and candidate of economic sciences; and T. Desyatova, department lecturer: "A Shortage of Personnel or a Surplus of Equipment?"]

[Text] In the last 10 years many farms have started to explain deficiencies in economic activity as a result of a shortage of manpower resources. Further explanation is needed here, however. A shortage of personnel is defined in terms of planned operations at the level of the machine-worker ratio and labor productivity that has been achieved.

A farm has two options for fulfilling production plans. The first is tied to maintaining existing and attracting additional (primarily from the younger generation) manpower. The second requires an increase in the level of complex mechanization and labor productivity, and replacing manual operations with mechanized operations. Both directions are being utilized in practice under present conditions. For an analysis of the trends in development of production collectives we will consider two five-year plans and the numbers of workers in sovkhozes of oblast production associations (Table 1).

In all oblasts there is a reduction in the total number of sovkhoz workers, and especially in the number of permanent workers. Who is it that is leaving? As it turns out, it is the women. If in the beginning of the 1960s they comprised approximately half (and even more) of the farms' staff, by the beginning of the 1970s, they accounted for 40-45 percent. In 1980 at sovkhozes in Kurgan Oblast the staff was only 38.8 percent women; in Orenburg Oblast it was 36.7 percent; in Perm Oblast, 43.4 percent; in Sverdlovsk Oblast, 42.9 percent; and in Udmurt ASSR, 46.9 percent. The main reason for the reduction in the proportion of women was retirement. There was no serious planned attempt to attract young women to agricultural production, and on their own they tried to find work in other sectors of the national economy. Playing a role here are the unfavorable working conditions that still exist at many work sites, inadequate vocational orientation among rural youth and the dif-

difficulties involved in acquiring skills for working in highly mechanized production. In 1980, among graduates of agricultural vocational-technical schools, young women accounted for 0.2 percent of the work force at sovkhoses in Kurgan Oblast, 0.3 percent in Orenburg Oblast, 7 percent in Sverdlovsk Oblast, 12 percent in Perm Oblast, and 0.3 percent in Udmurt ASSR. In the same year, of those completing agricultural vocational-technical schools, 87 percent of the young women did not remain at sovkhoses in Kurgan Oblast, 69 percent did not remain at sovkhoses in Orenburg Oblast, 44 percent in Sverdlovsk Oblast, 33 percent in Perm Oblast, and 44 percent in Udmurt ASSR.

Farms that are trying to get out of a difficult situation and overcome a manpower shortage, increase the amount of equipment they have sometimes without taking into account the possibilities for its rational utilization. As an example, we will consider the dynamics of the numbers of tractors, combines and equipment operators at Ural sovkhoses (Table 2).

Table 1

Number of Production Collectives (Computed by Sovkhoz)

<u>Oblast</u>	<u>1971</u>	<u>1976</u>	<u>1980</u>
Kurgan	$\frac{738}{550}$	$\frac{553}{418}$	$\frac{487}{330}$
Orenburg	$\frac{597}{460}$	$\frac{597}{454}$	$\frac{583}{401}$
Perm	$\frac{429}{354}$	$\frac{412}{336}$	$\frac{406}{279}$
Sverdlovsk	$\frac{668}{530}$	$\frac{642}{446}$	$\frac{615}{408}$
Udmurt ASSR	$\frac{559}{449}$	$\frac{467}{340}$	$\frac{451}{319}$

Note: The numerator is the number of all workers, the denominator is the number of permanent workers.

Table 2

Growth in the Volume of Equipment and in the Number of Equipment Operators (Computed by Sovkhoz)

<u>Oblast</u>	<u>1971</u>	<u>1976</u>	<u>1980</u>
Kurgan:			
Tractors	80.1	74.4	72.4
Combines	53.6	38.7	37.4
Operators	106	89.0	81.3

**Table 2 (continued)**

<b>Orenburg:</b>			
Tractors	82.7	93.6	83.4
Combines	63.3	61.7	57.9
Operators	103.4	102.8	96.3
<b>Perm:</b>			
Tractors	38.2	51.9	59.6
Combines	12.8	15.1	16.4
Operators	47.1	56.2	62.4
<b>Sverdlovsk:</b>			
Tractors	59.6	76.5	89.5
Combines	17.7	20.9	26.2
Operators	80.6	86.1	89.3
<b>Udmurt ASSR:</b>			
Tractors	45.1	49.3	52.8
Combines	15.6	14.4	17.6
Operators	60.4	56.0	59.9

There is a marked trend toward an excess of tractors and combines in relation to the number of operators. This is found first in Kurgan Oblast, then in Orenburg Oblast. An attempt was made to restrain the quantitative rise in equipment, but a sufficient result was not obtained. Calculated by sovkhoz, there was a shortage of 28 operators in Kurgan Oblast in 1971; 34 in 1976; and 18.5 in 1980; and in Orenburg Oblast, there was a shortage of 23, 52, and 45 operators for the same years. In other oblasts this problem became more acute by 1980. In Perm Oblast in 1980, an average of 13.6 units of machinery per sovkhoz did not have operators; in Sverdlovsk Oblast, 26.4 units of equipment lacked sufficient operators, and in Udmurt ASSR, 10.5 units. Naturally, under these conditions there can be no discussion of double-shift work during field-work periods. And in addition, operators are needed not only for tractors and combines, but also for excavators, bulldozers, and so on.

The situation that has developed on the farms requires technical transformation of production, a reorganization of the composition of the machinery and tractor fleet in favor of more productive machinery, and an increase in the level of intensification of production. It is essential to increase the unit capacity and reliability of equipment, work rates, the track width and row capacity of tractor-drawn and mounted equipment, so that several technical operations can be accomplished with one pass of the tractor and the multiple-purpose application of power machinery can be increased. This will make it possible to carry out a greater number of technological operations with a smaller amount of equipment, and consequently, fewer operators, and thus intensify production. The K-700 tractor (and its modifications) can work approximately three times as many conventional standard hectares per year as the T-75 and DT-75 tractors (all types) can. The output of the K-700 can be increased even more by equipping it with more modern trailer implements. The T-150 tractors can work

an area approximately twice that of the DT-75. Farms in Kurgan and Orenburg Oblasts, taking into account the acute shortage of operators, between 1971 and 1980 moved to a sharp reduction in DT-54, DT-75 and T-75 tractors. Their proportion of the total number of tractors on Ural farms dropped from 31 to 24.6 percent, and in Orenburg Oblast from 42.5 to 28 percent. The proportion of high-powered K-700 tractor increased (from 9 to 16 percent and from 8 to 22 percent, by oblast, respectively). The problem of providing sufficient numbers of operators has not yet been completely solved, but the total demand has been reduced somewhat.

At sovkhoses in Perm and Sverdlovsk Oblasts and in Udmurt ASSR, as before, there is an absolute and relative increase in the number of lower-powered tractors, which increases the demand for operators. At sovkhoses in Perm Oblast, the proportion of T-75 and DT-75 tractors increased between 1971 and 1980 from 31 to 42.6 percent, in Sverdlovsk Oblast there was an increase from 21 to 33 percent, and in Udmurt ASSR an increase from 32 to 44 percent. The proportion of K-700 tractors and their modifications in these oblasts and in Udmurt ASSR at the end of the last five-year plan was 0.5, 4.2 and 1.8 percent of the total, respectively.

Re-equipment of sovkhoses with "Niva", "Kolos" and "Sibiryak" grain combines has proceeded at a more rapid rate. In 1971, at sovkhoses in Kurgan Oblast they comprised 22 percent of the total and in 1980, 94 percent of the total; in Orenburg Oblast, these figures were 3 and 90 percent. At sovkhoses in Perm and Sverdlovsk Oblasts and in Udmurt ASSR in 1971 there were almost no powerful combines, and in 1980 they accounted for 94, 95 and 96 percent of the total, respectively. Their absolute number also increased, which increased the demand for operators, and the farms did not have any available (Table 2). The solution is to bring to the grain fields combines that are more powerful, have wider tracks and operate at higher speeds.

The shortage of operators has also affected the level of equipment utilization. The exploitation of low-powered tractors especially has become less efficient. At sovkhoses in Kurgan Oblast T-75 and DT-75 tractors (all types) worked 148 machine-days in 1971 and 120 in 1980; in Orenburg Oblast these figures were 138 and 125 machine-days; in Perm Oblast--228 and 135 machine-days; in Sverdlovsk Oblast--181 and 121 machine-days; in Udmurt ASSR--201 and 150 machine-days. This indicates that the sovkhoses are not able to maintain sufficient utilization of these tractors throughout the year.

The level of utilization of high-powered tractors is higher. At sovkhoses in Kurgan Oblast the K-700 (K-700A) worked 164 machine-days and 180 machine-shifts in 1980; in Orenburg Oblast these figures were 154 and 165; in Perm Oblast, they were 198 and 209; in Sverdlovsk Oblast, 157 and 165; and in Udmurt ASSR, 139 and 206. These tractors have a higher shift coefficient than the 75-powered models.

The utilization of powerful tractors varies quite a bit by oblast, but there is a common trend toward increasing their utilization. A workforce for them is being recruited and skilled operators are being trained. When analyzing utilization, it should be kept in mind that the sowing patterns and specialization of the farms affect utilization of equipment.

We can draw several conclusions from the information presented above. It is clear that it will not be possible to completely overcome the trend toward reducing the size of production collectives; this trend will continue in the 1980s. This is a manifestation of the general trend toward a decrease in the proportion of workers in agriculture. But this is occurring at a more rapid rate than is necessary for normal development of production in rural areas with the existing rate of growth in labor productivity and in volume of production. The situation is such that there should not be a reduction in the total number of people employed on farms in the Ural region. There should be an increase in the employment of the female work force. This will allow a reduction in the migration of males into other sectors.

At present there is an immense technical potential in Ural farms, which has not yet been utilized sufficiently. One reason for this is the shortage of operators. This can be overcome by technical re-equipment of production and utilization of more high-powered machinery. This creates a demand for highly skilled operators who can work on all types of equipment and who are familiar with the technology of production.

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#### Labor Discipline, Production Efficiency

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[Article by V. Ragulin, deputy chief of the Chelyabinsk Oblast Agricultural Administration; V. Arbuzin, director of the Chelyabinsk Oblast Agricultural Scientific Organization of Vocational-Technical Schools; and A. Stepunov, assistant professor of political economy at the Chelyabinsk Mechanization and Electrification of Agriculture Institute, and candidate of economic sciences: "Labor Discipline and Production Efficiency"]

[Text] Labor discipline forms the basis of any discipline (state, performance, industrial, and so on). Its essence is in a creative, conscientious attitude toward the work at hand, which guarantees achievement of high indicators in labor and conservation and multiplication of socialist property. Today the need for further strengthening of labor discipline is dictated primarily by the demands of production, whose separate sections depend on one another, and when the rhythm of work is interrupted in one section, there is a negative effect on the entire enterprise. At the same time it is necessary to take into account the accelerating rate of specialization and concentration of agricultural production on the basis of interindustrial cooperation and agro-industrial integration, under which an interruption in the operations of one sovkhos or kolkhoz affects the economy of other farms.

Strengthening labor discipline is also necessary because the mass of material production resulting from the work of one person has grown a great deal (and continues to grow). At kolkhozes in Chelyabinsk Oblast in 1970, the average annual income from one worker employed in agricultural production was 3978 rubles in fixed capital for agricultural purposes and 15 horsepower in energy capacity; in 1980 these figures were 10,379 rubles and 30.3 horsepower.

The basic principles of organizing industrial labor and production are coordination, regularity and a smooth-flowing system. These principles can be attained only when there is a high level of labor discipline. But this, unfortunately does not correspond to the demands of the day. At our request, managers of sovkhoses in Kaslinskiy rayon completed cards on 2703 workers; they had no complaints against 63.4 percent of these workers; 29.4 percent were not completely disciplined and 7.2 percent were considered to be violators of discipline. Only 10.4 percent of 2134 workers questioned considered labor discipline in their collectives to be high, 83 percent admitted that it was unsatisfactory and 6.6 percent considered it to be low.

The decisive criterion for labor discipline of a worker or of a collective as a whole is the volume of production put out per unit time or the services rendered according to accepted standards of quality. In other words, it promotes productive and efficient utilization of working hours. As an indicator of the level of labor discipline, we can take the number of man-days lost due to unauthorized absences per thousand workers, although this does not reflect, of course, all aspects of utilization of working hours. These data are cause for some disturbing thoughts (Table 1).

**Table 1    Labor Discipline and Production Efficiency (1979)**

<u>Indicator</u>	Groups of rayons according to number of man-days lost due to unauthorized absences		
	<u>up to 1000</u>	<u>1000-1500</u>	<u>1500 or more</u>
Number of rayons in the group	10	6	10
Number of man-days lost due to unauthorized absences, per 1000 workers	825	1228	2040
Fluctuation in labor force, percent	9.3	12.1	14.9
Gross production, rubles per 1 man-hour	2.82	2.73	2.39
per 1 ruble fixed capital	0.51	0.48	0.38
per 1 ruble expended	0.80	0.75	0.67

In the third group of rayons, where there were more unauthorized absences, labor productivity was 15.3 percent lower than in the first group, the capital-output ratio was 25.5 percent lower, and recovery of expenditures was 16.3 percent lower. At kolkhozes in 1980, losses due to unauthorized absences accounted for 1.3 percent of the total working hours, and for 3 percent in sovkhoses. This caused the kolkhozes to lose 3.5 million rubles' worth of gross production, and sovkhoses lost 14.7 million rubles' worth of gross production.

A great deal depends on well-thought-out organization of labor. But some people do not have a clear enough idea of their functions in national production. For example, 7.8 percent of those questioned considered that their production tasks are not clearly defined, and 19.2 percent stated that the reason for working for others is the absence of strictly assigned responsibilities. This, in addition to an absence of control and effective sanctions leads to violations of labor discipline. This means that the campaign to strengthen labor discipline should begin with these questions. Many of them are being removed from the agenda with the creation of brigades and units with the job contract plus bonus system of wages and the time rate credit system. In these units there is a stronger feeling of collectivism, a healthy moral and psychological climate, there are fewer unauthorized absences and violations of industrial and production discipline, and production plans are fulfilled and exceeded.

Here is an example. The collective of the milk-herd brigade from the "Rossiya" sovkhos in Sosnovskiy rayon, headed by T. Z. Resepina, is distinguished by its solidarity; every year it exceeds the plan for milk production and the milk yield from forage cows exceeds 4500 kilograms. In crop-growing brigades with the job contract plus bonus system of wages, as a rule there is also a healthy environment. One of these brigades, in the "Chernovskiy" sovkhos in Chebar-kul'skiy rayon, is led by L. L. Ustinova. Here the cost of one quintal of potatoes in 1980 was 4.8 rubles less than the planned cost, the cost of carrots was 3.3 rubles less, and the cost of root crops was 1.29 rubles less. The costs of production are much lower than the average sovkhos indicators.

There is currently a transition taking place in the field to the brigade form of organization of labor and wages; there are already 1300 units working under this system.

It should be pointed out that strong discipline is tied directly to consolidation of the labor force and reducing its fluctuation (Table 2).

**Table 2     Fluctuation in the Labor Force and Production Efficiency (1979)**

<u>Indicator</u>	Grouping of rayons according to fluctuation in the labor force (percent)		
	<u>up to 10.0</u>	<u>10.0-15.0</u>	<u>15.1 and above</u>
Number of rayons in the group	7	10	9
Fluctuation in labor force, percent	8.4	12.2	18.1
Gross production, rubles per 1 worker	5330	5230	4661
per man-hour	2.84	2.69	2.51
per ruble fixed capital	0.50	0.46	0.45
per ruble expended	0.79	0.71	0.66
Losses due to unauthorized absences per 1000 workers, man-days	803	1215	2352

It is evident from Table 2 that the higher the fluctuation, the greater the losses in working time and the lower the production indicators. The coefficient of the turnover of the labor force for violations of labor discipline (the ratio of those dismissed for violations to the average annual number of workers) is 1.6 percent, for example, at Kaslinskiy rayon sovkhoses, and the proportion of "violators" among those who have quit is 5.7 percent. There is an average interval of 31 days between the time a worker is dismissed and his starting a new job (according to data from the questionnaire). A large number of workers are dismissed each year from kolkhoses and sovkhoses (in particular from sovkhoses). The economic losses resulting from their non-participation in labor while looking for a new job total 11.3 million rubles.

Many managers explain the low level of labor discipline as a result of a manpower shortage. They believe that it is better to have an undisciplined worker than no worker at all, and lower their demands on the workers. Loafers and chislers take advantage of this.

What can be done to reduce the manpower shortage? First of all, the proportion of workers involved in manual labor must be reduced. This process is going slowly. Between 1971 and 1980, the number of animals for which one sovkhos worker employed in caring for cattle was responsible grew by only 1.6 percent. The number of sovkhos workers performing work by hand dropped from 52.6 to 48.5 percent between the last two censuses (1975-1979). A program for reducing manual labor costs has been developed and it needs to be incorporated into production more energetically.

One of the methods for strengthening labor discipline is formation in each member of society of an attitude of ownership toward socialist property and development of the individual as a joint owner of collectivized means of production. Broad inclusion of workers in the management of production will promote this. We will support this thesis with an example.

The northern branch of the "Muslyumovskiy" sovkhos in Sosnovskiy rayon has been directed for 17 years by N. Z. Chvelev, bearer of the Order of Lenin. Here the most important production problems and tasks that involve education of people are discussed regularly at party, trade union, Komsomol and brigade meetings. The branch has public organizations that are actively functioning: a deputies' group for people's control, a women's council, and so on. The collective is distinguished by a high level of labor discipline. The fluctuation in manpower here has been reduced practically to zero, there is an efficient system of material and moral incentives, and there is a complex system for quality control. Therefore, the branch constantly achieves good production results and in 1980 the grain yield was 42 quintals per hectare, and the milk yield per forage cow was 4232 kilograms.

Public opinion plays a large role here. It promotes development of a high level of morality and civic responsibility for labor results. At the "Uyskiy" sovkhos, such forms of moral incentives are utilized extensively, as awarding the titles of "Best in the Trade", "Distinguished Sovkhos Worker", "Best Brigade Leader and Teacher", celebrations in honor of outstanding workers are organized on anniversary dates, and so on. The farm has a museum of labor

glory, a book of honor has been instituted, and there are councils of working honor and comrades' courts. For over 10 years there has been a complex system for consolidating the labor force at the sovkhoz, which includes measures for vocational orientation of students and adaptation of young workers in production. Serious attention is directed here toward improving working and living conditions. As a result, manpower fluctuation has been reduced to 7-8 percent, and losses of working time due to unauthorized absences are 0.5 percent of the total working time.

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#### New Wage Systems Discussed

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[Article by V. Alyab'yev, senior economist of the District Land Department of the All-Russian Scientific Research Institute of Economics, Labor and Management in Agriculture; V. Drokin, sector chief of the District Land Department of the All-Russian Scientific Research Institute of Economics, Labor and Management in Agriculture and candidate of economic sciences; and N. Beresnev, chief economist of the Department of Organization of Labor and Wages of the Sverdlovsk Oblast Agricultural Production Administration: "The Experience of Time Rate Credits with a Non-Job Order System of Wages"]

[Text] With the development of scientific and technical progress in sectors of agriculture, especially in crop-growing, collective forms of organizing labor are being applied extensively. Collective forms of wage payment must correspond to these forms.

The job contract plus bonus system of wages with time rate credits (the non-job order system of wages) has elicited the most interest in farming from the point of view of collective incentives. The non-job order system of wages was first applied at Sverdlovsk Oblast farms in 1960. Last year the number of non-job order farms reached 290. Not all of them achieved a high level of efficiency, but here are the statistical data for the oblast: 15 percent of the collectives exceeded the average indicators for the farm or rayon for yield on fixed crops by an average of 15 percent; 13 percent exceeded them by 25 percent; another 13 percent of the collectives exceeded them by 35-45 percent; and 18 percent exceeded them by a factor of 1.5-2.

What are the benefits of the job contract plus bonus system of wages with time rate credits? We will list the main ones. In brigades and units there is no division of operations into those that are profitable and those that are not, for which a larger or smaller sum can be charged under a piece-rate wage system. A feeling is developing among machine operators of trust and mutual benefit; this system of wages provides an incentive for them to control the quality of work themselves.

The basic conditions for successful operation of brigades and units under the non-job order wage system are well-chosen collectives, an adequate minimum

monthly advance payment, and correctly established quotations for production for the final settlement. Over the course of the year they must guarantee a certain production independence in the cultivation of fixed crops.

But it happens that these subdivisions fall apart. As a rule, this occurs when they are created without preliminary estimates of their size; they turn out to be either unable to fulfill the volume of work stipulated by industrial charts using their own forces, or operators are often diverted from the unit. As a result, they have less interest in the final results of their work.

Another reason for the disintegration of collectives working under the non-job order system is that over the course of the year they are not able to maintain a permanent staff. It is important to create an atmosphere of mutual understanding among the operators. At some farms, when determining the size of the time rate credits for operators, their practical skills and attitudes toward work are not taken into consideration. This is a source of discord among them.

Depending on specific conditions, an individual system of advance payments to machine operators can be applied up to the estimates for production. Differences must be taken into account when determining the individual hourly or daily rate of the advance (when a different number of indicators determining its size are taken into account: the model of tractor, the labor intensive-ness of the crop being cultivated, the grade of the machine operators, and so on), or when establishing a general fund for advance payments. Forms of control (administrative or mutual checks) over the quality of work also influence the selection of the system of time rate credits.

As examples of how these questions were resolved, we will consider a number of farms in Sverdlovsk Oblast. First we will look at the experience of the "Put' k kommunizmu" kolkhoz in Talitskiy rayon. This farm has a system of administrative quality control with daily written evaluations, the time worked is counted in hours, the fund for advance payments and the size of the hourly rate are determined separately for each type of job and for each field.

The fodder production brigade at the sovkhos imeni Chapayev in Rezhevskiy rayon has its peculiarities: administrative quality control with daily written evaluations, time worked is counted in hours, advance payments are differentiated according to tractor models and proceeding from the 4th and 5th grades of wage rates for tractor and machinery operators earning piece-rate wages.

At the fodder production brigade of the "Machazhskiy" sovkhos in Artinskiy rayon there is negligible administrative control, there is no daily written evaluation, time worked is counted in hours, the size of the advance payment is determined by the cost of one hour at the 5th grade rate.

In the unit of the "Zavety Lenina" kolkhoz in Tavdinskiy rayon there is practically no administrative quality control, time worked is counted in days, and the daily rate for advance payments as of 1981 is 5 rubles.

The "Put' k kommunizmu" kolkhoz has 6346 hectares of land, with 4100 hectares planted with grains and legumes and 2100 hectares planted with fodder crops. The farm has 86 tractors (21 caterpillar tractors). The average annual number of workers is 300, which includes 98 machinery operators.

Wages are determined by the amount of time worked and the labor quality coefficient (LQC). A coefficient of 1 corresponds to an excellent level of quality; 0.8 is good, and 0.6 is average (and does not warrant supplementary payments). The size of the supplementary payments depends on the labor-intensiveness and difficulty of the work. The LQC is also taken into account when evaluations are made for production above the plan (for bonuses at the end of the year). At the farm evaluations are made per 1 ton of fodder units.

Final LQCs (for the year) depend also on the labor discipline status of each member of the collective and on observance of labor safety practices. Infringement of these indicators will cause them to drop, which means a reduction in bonuses for the year.

Differences in evaluations of labor quality, their comparability and publication create a situation in which good workers do not receive the same wages as do workers who do careless work. At the same time, this induces those who are lagging behind to strive for higher evaluations.

The system that the kolkhoz has adopted for accounting for time actually worked also has its peculiarities, which exclude the possibility of exaggerated production indicators. The targets for the volume of work performed in the field here are defined in hours, calculated according to fixed standards. The planning division developed a special form of job orders for this purpose. It was first applied in the spring of 1980 in one brigade. A permanent collective of machinery operators was chosen from its personnel and they were assigned eight tractors. Job orders for fulfilling mechanized field work are drawn up for each field according to the type of work involved. The sum of basic wages is calculated by the usual method proceeding from output norms and wage rates. The special feature of the orders is that they provide a fixed standard of time for a certain volume of field work in norm-hours and the time limit for completing the work in days. Also indicated are additional wages expressed as a percentage of the basic wage dependent on the coefficient of quality. The order takes into account the number of hours and days worked and the volume of work completed within the given time limit. The other side of the order indicates the actual number of hours worked per day. This serves as a basis for distribution of wages among the workers according to hourly wages.

The detachment chiefs determine the evaluation coefficients: they write in the orders the volume of work that corresponds to one level of quality or another. The operators themselves account for the hours and write them in every day in the order. With this system of accounting for labor and wages, the operators do not try to exaggerate the number of hours they have worked. Otherwise, they may not manage to complete the work within the given time period and they will then be denied completely any additional wages and will be paid only according to the wage rates. If an operator does not meet the norms, but performs his work at a high level of quality and within the time limit, he will still be paid well because of a higher hourly wage.

The farm keeps a record of each worker's quality of work which contains the average LQC for a given time period (10 days, one month, etc.). For proper evaluation of labor quality, specialists use evaluation charts for each type of field work. They contain the methods and time of the labor evaluation. So the quality of sowing and the application of mineral fertilizers is evaluated at the time when the first shoots appear; this includes the application of ammonium hydrate. Other jobs are evaluated after they are completed.

The evaluation charts define the labor quality not only of primary workers, but of ancillary workers as well. Work that has been poorly done is redone or is not paid for. For violations of labor discipline (tardiness, leaving work early, and so on) a coefficient of 0.2 is assigned; for unauthorized absences, a coefficient of 0 is assigned; for failure to carry out instructions, a 0.2. This is taken into account when the LQC for the month is being calculated, and the resulting coefficient is reduced by the appropriate amount.

Labor quality of detachment chiefs for a period of field work is evaluated according to five indicators: working conditions of the fields (presence of sticks and metal objects, treatment of the edges of fields and roads, absence of sowing equipment in the fields); the quality of the sowing; promptness in writing out job orders and objectivity in evaluating labor quality; outlays from the wage fund; promptness in all types of reporting to the accounting department. Each of these points is evaluated using one coefficient (1.0, 0.8, 0.6). After the conditions of the fields and the quality of sowing are checked, detachment chiefs are paid supplementary wages: with a coefficient of 1, the supplement is 40 percent; with a coefficient of 0.8, it is 30 percent. With the introduction of the job order system, there is no longer a need to measure the volume of work, since the job orders are provided for the entire field.

Control over labor quality has not required additional personnel, since it is included in the responsibilities of specialists and managers. The primary functions of control are carried out by detachment chiefs and machinery operators: the collective form of wage payment develops self-control and mutual control among the workers.

As a result, the kolkhoz has increased the yield of its crops. If an average of 17.4 quintals per hectare of grain crops was obtained in the 9th Five-Year Plan, 25 quintals per hectare were obtained in the 10th Five-Year Plan. The cost of one quintal of grain at the farm is lower than the average indicators for the rayon: in 1980 the farm's cost was 6.95 rubles and the average rayon cost was 9.14 rubles.

Another system of time rate credits is applied in the fodder brigade at the sovkhos imeni Chapayev in Rezhevskiy rayon. The brigade has 2350 hectares of land; 1861 hectares are occupied by perennial and annual grasses, 400 hectares are planted with silage crops, and 90 hectares are for root crops. Fodder crops are cultivated in all three branches of the sovkhos. Natural hay-mowing is done by tractor-field work brigades. The brigade has 31 tractors (including 4 K-700, 8 DT-75M, 1 C-100, 16 MTZ-80 and 2 T-16 tractors), 2 SKD-5 combines,

9 KS-2.6 and KSS-2.6 silage harvesters, and 8 press harvesters. A unit for artificial drying of the grasses is also included in the brigade.

The liberated brigade leader has under his supervision an assistant (who is an AIST chief), a fodder-production agronomist, an accountant, a brigade-leader mechanic, and an assistant brigade leader for accounting. The brigade leader is subordinate to the director, and in questions of technology, he is subordinate to the chief agronomist of the sovkhos. He is responsible to the chief engineer for the condition of the tractors and agricultural machinery.

The brigade consists of five units: one cultivates silage crops (9 people); another, root crops (2 people); the third, perennial grasses (9 people); the fourth prepares grass meal (9 people) and the fifth is engaged in technical service (3 people).

A job contract plus bonus system of wages with time rate credits is used for machinery operators included in specialized units. The time rate credits are paid to them for each hour of time actually worked and are differentiated according to the tractor model. Tractor operators working on the K-700 and C-100 models are paid according to the 5th grade rate (92 kopecks per hour); those working on the DT-75, T-40 and MTZ-50 models are paid at the 4th grade rate (82 kopecks).

The volume, quality of work completed and number of hours worked are written in the tractor operators' accounting sheets every day. There is also a daily accounting of additional wages for quality of field work and increased wages for deadlines. An additional 40 percent is added to the time rate advance payment for excellent work, and an additional 20 percent for good work.

Time rate advance payments are made only for field work tied to fodder production. For transportation and economic operations, a piece rate system is used. This system is also used to pay machinery operators who are brought in from other sovkhos units during intense work periods. But at the end of the year this sum is deducted from the brigade's wage fund for production.

After production credits are completed (taking into account data from laboratory analysis and plan job contract estimates for 1 quintal of production), a wage sum is determined for each fodder crop, which should be paid to machinery operators according to the year's results. Production expenses are deducted from this amount beforehand, and the remaining funds are distributed to the brigade's operators in proportion to the credits that have been paid.

The fodder production brigade at the sovkhos imeni Chapayev has been in existence for only two years, but it has achieved quite good results. In 1981 the yield on silage crops was 243 quintals per hectare, and two years before it was only 94 quintals per hectare. If between 1976 and 1979 an average of 8.9 quintals of feed units were procured per each standard head of cattle, 12.7 quintals were procured in 1980. The output per standard tractor increased by 10 to 12 percent during this time.

This system of organization and wage payment is efficient in farms where the fodder production brigades contain more than 25 people and there are specialized units using various types of equipment.

The experience of the "Manchazhskiy" sovkhos in Artinskiy rayon merits attention; 35 percent of its 9448 hectares of land is occupied by fodder crops. In 1978, on the basis of a mechanized detachment a fodder production brigade of 14 machinery operators was formed. It was assigned 12 tractors (3 caterpillar tractors), and 4 silage combines. The brigade cultivates fodder crops in three branches. The brigade has over half of the area of fodder crops--1307 hectares, including 46 hectares of root crops, and 460 hectares of silage, perennial and annual grasses. The equipment is concentrated in the central farm settlement.

A firm daily credit is established for the operators at the level of the 5th grade of the tractor operators and machine operators scale (for time rate workers of the 3rd group)--5.82 rubles. The size of the credit is the same for all operators and is not dependent on the type of tractors they are operating. Every day the volume of work completed and an evaluation of its quality, as well as the number of hours worked are written down in the accounting sheets. Payment for transportation and economic operations is made according to piece rate estimates for brigade members and for workers brought in from elsewhere in the sovkhos.

In comparison with 1977, in the last year of the 10th Five-Year Plan the sunflower yield in the brigade grew from 214.2 quintals per hectare to 353; annual grasses for haying grew from 74.2 quintals per hectare to 154; root crops grew from 280 quintals per hectare to 434; and the feed unit yield went from 20 to 27-28 quintals per hectare.

The special feature of this type of non-job order wage system is the fact that the operators have a firm daily wage rate, the size of the time rate advance payment does not depend on the number of hours worked per day or on the type of tractor being operated. Furthermore, this system has a dual accounting feature (by hour and by volume of work) and wages are paid according to time rate and piece rate calculations (conditionally).

This type of non-job order wage system is acceptable for small brigades (10 to 15 people), and their composition must be uniform in terms of skills and work experience. The brigade should be assigned a minimal selection of crops over an area no larger than 1500 hectares. The brigade should not have different models of equipment.

Less complicated variations of the time rate credit system are being applied successfully in small specialized collectives. An example of this can be seen in the "Zavety Lenina" kolkhoz in Tavdinskiy rayon. The first unit of this type was created there in 1977. It was assigned fields close to the village for crop rotation and 200 hectares of grain fields from the crop rotation of the neighboring brigade. All seven members of the unit live in the central farm settlement, which is 8 kilometers from the fields. In 1980 they cultivated 1054 hectares of grain and 180 hectares of perennial and annual grasses. All

the machinery operators can work as tractor operators, combine operators and drivers. The unit is assigned 2 K-700 tractors, 3 DT-75 tractors, 4 grain combines and 2 trucks. The collective independently prepares the soil, does the planting, tends the planting, harvests the grain completely, and takes the grain to the threshing area.

The collective has the following system of wages. Everyone receives an advance payment of 100 rubles per month before production is computed (with 25 days worked), or 4 rubles per day. The size of the advance payment does not depend on the number of hours worked per day. An additional payment is made for the operator's grade level (2 operators are grade 1, the rest are grade 2), and another 15 percent goes to the unit leader.

The final distribution of additional payments and bonuses for production obtained is proportional to the number of days worked in the unit (not taking into account the volume of work and the differences in equipment). The total earnings for the unit are determined in the final calculations by the following method: additional payments of 25 percent for production are added to the wage fund for work according to the production chart (it is corrected for the actual volume of work completed) and 20 percent of the value (according to the purchase prices) is added above the plan. Wages that have already been paid (advance payments to members of the unit and wages paid to workers brought in from other divisions) are deducted from the sum that is obtained.

In 1980 the value of the unit's gross production calculated per man-day was 127 rubles, and for the kolkhoz it was 24 rubles. In the same year the unit had 23.2 quintals of grain per hectare, the kolkhoz obtained 15.2, and the rayon 15.3. The average annual value of gross production in the unit between 1977 and 1980 calculated per machinery operator was 15,100 rubles and for the kolkhoz this indicator was equal to 5100 rubles.

Every year the unit signs an agreement with the management of the kolkhoz. In 1981 it committed itself to producing 1300 tons of seed grain with a moisture content of no more than 18 percent, and forage crops of no more than 22 percent moisture. The kolkhoz paid the unit a bonus for this: a bonus of 25 percent for the seed and 20 percent for the forage, of the value of the above-plan production. A special system is stipulated in case of unfavorable weather conditions.

In 1981 the unit was assigned 1800 hectares for grain plantings, and its size was increased to 10 people (two of them work on trucks). But in this case there is still no brigade leader and no technical or accounting assistants; their responsibilities are carried out by the unit leader who has not been released.

A true creative atmosphere has been created in the unit, mutual assistance and profit has been developed, and the operators often exchange places, giving their tired comrades an opportunity to work in a less demanding section.

This system of time rate advance payments is advisable for specialized units with a small variety of crops in fields with one field or fodder crop rotation, and with 5-10 people working as operators.

We have cited only a few examples of the successful application of job contract plus bonus wages with time rate credits. It should be mentioned that an all-Russian conference held in Chelyabinsk in December 1981 was devoted to this topic, and directed its participants to incorporate the collective contract into production on a broad basis.

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#### Animal Husbandry Organization

Sverdlovsk URAL'SKIYE NIVY in Russian No 11, Nov 82 pp 12-14

[Article by G. Kizhlay, candidate of economic sciences and senior instructor at Sverdlovsk Agricultural Institute; and L. Dorokhova, junior research associate at the Ural Regional Division of the All-Russian Scientific Research Institute of Agricultural Economics, Labor and Management: "How To Develop and Introduce Collective Forms of Labor Organization and Wages in Animal Husbandry"]

[Text] The conversion of animal husbandry to an industrial basis is accompanied by a deepening of the technological and functional division of labor. This process requires changes in the organization of labor within brigades. Collective forms of service are replacing individual forms.

At present the unit organization of labor is being practiced at 200 farms in Sverdlovsk Oblast. At industrial-type farms and complexes there are predominantly specialized units that unite one category of workers. With a low level of mechanization, mixed units are often formed consisting of milkers and cattle-farm workers.

At the majority of farms, collective forms of organization of labor and wages are being employed successfully with cattle-farm workers, machinery operators (feeders and fitter-electricians). The transition to the unit organization of labor is more complicated for milking-machine operators.

The experiences of the "Severskiy", "Brodovskoy", "Shilovskiy" and "Komsomol'skiy" sovkhozes, the kolkhoz imeni Kalinin and other farms provide convincing confirmation of the advantages of the unit organization of labor. In addition to a growth in efficiency and labor productivity, there has been significant strengthening of collective responsibility, mutual control, job interchangeability and mutual assistance; a labor and rest routine has been established for the workers; the educational role of the collective has increased; and management of production has become easier. However, an analysis has shown that often when units are formed, there is inadequate consideration of technical, technological and organizational factors. And even less attention is given to social and psychological points. All this has a negative effect on the units' work results and leads to their collapse. This is supported by the

data from the survey of farm managers and specialists, who pointed to fluctuation and shortages of skilled personnel (39.5 percent of those questioned) and to shortcomings in the formation and functioning of the units (27.9 percent of those questioned) as primary reasons for reduced efficiency in the units' work.

We tried to determine the technical, technological, organizational, economic, social and psychological factors which contribute to successful application of collective forms of organization of labor and wages in animal husbandry. We were able to define a number of principles which must be taken into account when developing and implementing the unit system of organization of labor.

When creating units, one must first of all take into account the technical, technological and organizational parameters of production, under which the application of the unit system is advisable. These include: the flow line-shop system of milk production, or elements of it; open maintenance of cows and milking them at milking installations; the impossibility of individual accounting of labor results due to technical parameters, and so on. In practice these conditions are often overlapping.

It is also important to determine the type of unit, the size and professional composition of its workers, and to define correctly its cost accounting goal. It is also necessary to take a sound approach to forming the labor collectives, to implement explanatory work, to study advanced methods, to improve the workers' skills, and to select carefully people to work in the unit and to serve as its leader. In practice, farms often limit themselves to a union of milkers working in the same farmyard. Experienced managers and specialists make their selections based on personal knowledge of the workers' characteristics. But this is inadequate, since decisions based on subjective assumptions can often lead to mistakes.

In order to avoid this, special methods for selection must be applied which take into account indicators of a social and psychological nature that are based on a sociometric survey. First of all, it must be remembered that the wages of each member of the unit depend on the results of the entire collective. Therefore, certain indicators take on great importance, such as the level of solidarity in the collective, that is, the readiness of all the members for joint work.

The results of a sociometric survey conducted at farms in Sverdlovsk Oblast showed a direct relationship between the level of solidarity (the relationship of mutually positive selections to the total number of possible mutual selections) and the result indicators; and level of solidarity and how satisfactory the collective forms of wages were. Specifically, unsatisfactory collective wages appear when the coefficient of solidarity is lower than 0.4.

We will concentrate on the more important factors affecting the collective's solidarity. The greatest solidarity is noted in units of 4-5 people. Here there are no great age discrepancies and the people have similar attitudes toward work; the workers in these units have a close technological inter-relationship, and the nomination of the unit leader is arranged by the workers.

We recommend that during the formation stage there be a survey to determine people's desire to work jointly. It is advisable to assign this task to a worker in the personnel division who should see to it that the responses are anonymous. It is also advisable to take into account the opinions of the farm's managers, specialists and veterinary specialists of the professional and moral qualities of future members of the unit. A unit can be formed if the level of solidarity in the preliminary survey is higher than 0.25.

It is of no less importance in each specific case to determine the number of workers out of which the selection may be made. This is not difficult when there is a good supply of skilled workers. If there is a shortage of skilled workers on the farm, special attention must be paid to selecting workers who will form the core of the unit. Then, taking into account the preliminary level of solidarity and the organizational and business skills of the unit leader, one or two less disciplined or less experienced workers can be added to the unit. This approach is based on the fact the a unit's collective, with a high degree of organization, has great educational strength.

But preliminary selection is only a precondition for normal, efficient work in the collective. Unforeseen conflicts can arise. Therefore it is advisable to conduct periodic sociometric surveys while the unit is functioning, and when appropriate, take the necessary steps.

One should not be limited by the selection of people, however. It is also necessary to improve forms of material incentives. Most widespread is the method of distributing collective wages taking into account wage category and amount of time worked. Supplementary wages and bonuses are divided, as a rule, in proportion to the basic wages. This is an efficient system when there is a high level of solidarity in the collective. But in practice, in the initial period of units' operation this system of distributing wages is often unsatisfactory. At a number of farms there is an effort to take into account the contribution of each worker to the final results. For example, at the "Karginskiy" sovkhos in Sverdlovsk Oblast conventional categories are used, and at the Karl Marx kolkhoz in Orenburg Oblast, a point system is used to evaluate labor.

In order to avoid parasitical behavior, provide an increase in skills, implement a system of teaching, and observe technological and labor discipline, it is better to distribute basic wages taking into account the wage category and amount of time worked, and supplementary wages and bonuses should be distributed according to the contribution of each worker on the basis of a point system of evaluation or a coefficient of labor participation (CLP). This indicator expresses the attitudes of the workers toward fulfilling their responsibilities and is determined by the collective. The CLP is applied when supplementary wages are distributed among members of a labor collective (for increases in the animals' productivity and increased product quality, preservation of the animal population and increased output of offspring), and also when bonuses are distributed (for delivery of higher quality milk, exceeding the plan for gross production, and for reducing direct costs).

When using the CLP as an indicator for distribution of supplementary wages and bonuses, the principle of voluntary work must be observed. It is best to take 1 as the base coefficient of labor participation. When determining the factors in workers' labor activity that raise or lower collective labor results, the CLP is increased or decreased accordingly. A list of decreasing and increasing indicators is given in Tables 1 and 2.

In the distribution of supplementary wages the CLP can fluctuate between 0.5 and 1.5; and in the distribution of bonuses, from 0 to 1.5. An actual CLP is established for each worker by a brigade (complex) council, taking into account increasing and decreasing indicators; it is discussed at a general meeting and officially recorded. This document is transmitted to the accounting department and serves as the basis for distribution of supplementary wages and bonuses. In order to guarantee objectivity in establishing the actual CLP, the brigade or unit leader must provide a daily account of the brigade members' neglect of production responsibilities. The final CLP for the year is defined as the arithmetic average of the monthly coefficients.

We will provide an example of distributing bonuses for delivery of higher quality milk in a specialized unit of milking machine operators. Here are the initial data: dairy industry enterprises allot a farm up to 3.9 percent of the value for delivery of first quality milk (3 percent of the milk's value goes for bonuses for the livestock workers); for first quality chilled milk delivered at a temperature no higher than +10 degrees, a bonus of up to 70 percent of the additional charge is allotted (this is equal to 3.5 rubles, since the additional charge is 5 rubles per ton).

Bonuses are charged once a month after production sales. In the unit of milking machine operators, 5 people service 200 cows. In a month 600 quintals of milk are produced, 570 quintals are sold to the state, of which 485 quintals are first quality and 85 quintals are second quality; 200 quintals of first quality milk are delivered at temperatures lower than +10 degrees. The selling price of one quintal is 34.2 rubles (in zone 2). The total sum of bonuses paid to workers for higher quality milk is 567 rubles (497 rubles for first quality milk and 70 rubles for chilled milk).

According to the system established at the farm, 60 percent of the total goes to bonuses for milking machine operators, which is 340 rubles. For each ruble of basic wages, there is a 43.5 kopeck bonus.

According to the month's results, I. S. Ivanova, a milking machine operator, had her CLP reduced by 0.2 because of a low indicator for level of milk purity; A. I. Vasil'yeva's CLP was increased by 1.2 for helping her comrades in their work and acting as a teacher. The remaining operators were assigned coefficients of 1.0. We will determine the size of the bonus for each worker. We multiply the given bonus (43.5 kopecks per 1 ruble of basic wages), taking into account the CLP, by the wages for the month (Table 3).

This is the method used for distributing bonuses for exceeding the plan for gross production and for reducing direct costs, as well as for distributing supplementary wages. This example is one of the variations for distributing

collective wages and bonuses. In each specific case, the method selected depends on the forms of labor organization and the size of the primary labor collective and on the character of the interrelations between the workers, the level of conscientiousness and the attitude toward labor, which are all important.

A systematic approach during the formation and functioning of units, taking into account technical, technological, organizational, economic, social and psychological demands, will make it possible to increase significantly their efficiency in dairy cattle farming.

**Table 1** List of Indicators which Decrease the CLP of Dairy Farm Workers

<u>Indicator</u>	<u>Worker Category</u>	<u>Size of Decrease</u>
<b>1. Technological Discipline</b>		
<b>Violation of Milking Technology:</b>		
Not observing consistent fulfillment of technological processes	Milking machine operator	0.3
Incomplete milking (determined by control milking one minute after basic milking is completed, once a month)	Milking machine operator	0.1
Irregular maintenance of milking equipment and containers	Milking machine operator	0.1
Contaminated milk (judging by the condition of filters every 10 days)	Milking machine operator, operator in charge of animal care	0.2
Failure to follow system for storing milk	Dairy operator	0.3
Violation of technological and technical requirements when operating machinery	Dairy operator, fitter-electrician, feeder	0.3
Failure to provide prompt technical maintenance and care of equipment	Fitter-electrician, feeder	0.2
Failure to supply prompt and complete feeding	Feeder	0.3
Incorrect distribution of feed (not taking into account physiological condition and productivity of the animals)	Milking machine operator, feeder	0.05
Providing animals with feed in unprepared form	Feeder, milking machine operator	0.1
Irrational outlays and losses of feed	Milking machine operator feeder	0.1

Failure to let the cows exercise in the established time periods	Milking machine operator, maintenance operator	0.1
Failure to release cows for insemination at the appropriate time and failure to provide aid in the insemination	Milking machine operator, operator in charge of animal care	0.1
Failure to conduct the driving of animals promptly and properly (under the flow line-shop system for milk production)	Milking machine operator maintenance operator	0.05
Failure to provide assistance in treatment, preventive and diagnostic measures	Milking machine operator, maintenance operator	0.1
<b>2. Condition of the Work Place</b>		
Failure to provide prompt and thorough removal of manure from stalls	Maintenance operator	0.3
Failure to provide prompt cleaning of:		
entries and doorways	Maintenance operator	0.05
feeding troughs and passageways	Maintenance operator, milking machine operator	0.05
Failure to provide prompt removal of manure from the premises	Maintenance operator, fitter-electrician	0.1
Unsanitary condition of the animals	Maintenance operator, milking machine operator	0.2
Dirty overalls	Maintenance operator, milking machine operator	
Failure to conduct cleaning days promptly	All workers	0.2
<b>3. Observance of labor discipline</b>	All workers	0.05-0.5

**Table 2 List of Indicators which Increase the CLP of Dairy Farm Workers**

<u>Indicator</u>	<u>Size of the Increase</u>
Conscientious attitude toward labor	0.1
Helping, teaching one's comrades	0.2
Performing the more complicated operations (while observing technological requirements)	0.3
Carrying out the responsibilities of an absent worker (expanding the service area, increasing the cow population)	0.1
Maintaining machinery and equipment in working order	0.3
Other accomplishments which promote an increase in the collective's labor productivity	0.1

**Table 3**     **Distribution of Bonuses for Higher Quality Milk in the Milking Machine Operators' Unit**

<u>Name of Operator</u>	<u>Days Worked</u>	<u>Wages (Rub.)</u>	<u>Bonus (Kop.) per 1 ruble of wages</u>	<u>Taking CLP into account</u>	<u>CLP</u>	<u>Total Bonuses (Rub.)</u>	<u>Total Bonuses &amp; Wages (Rub.)</u>
L. I. Sidorova	24	156	43.5	43.5	1.0	67	223
I. S. Ivanova	23	150	43.5	34.8	0.8	52	202
R. P. Smirnova	24	156	43.5	43.5	1.0	67	223
A. I. Vasil'yeva	26	169	43.5	52.2	1.2	88	257
A. P. Novikova	23	150	43.5	43.5	1.0	66	216
<b>Total</b>	<b>120</b>	<b>781</b>	<b>--</b>			<b>340</b>	<b>1121</b>

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**Animal Husbandry Increased Labor Productivity.**

Sverdlovsk URAL'SKIYE NIVY in Russian No 11, Nov 82 pp 6-8

[Article by A. Novoselov, assistant professor at Sverdlovsk National Economic Institute and candidate of economic sciences; A. Sokhareva, director of the Ural Scientific Research Station for Labor Norm Setting; and G. Udilova, chief of the labor norm setting in animal husbandry division: "Resources for Increasing Labor Productivity in Animal Husbandry"]

[Text] Converting animal husbandry to an industrial base requires improved organization and norm setting in labor at all stages of production. A substantial resource for increasing labor productivity among animal husbandry workers lies in improving the structure of utilization of work time. A check on the status of labor norm setting, certification of livestock accommodations and time and motion studies conducted by specialists from the Ural Regional Norm Setting and Research Station confirm this conclusion.

In livestock raising today, an average of 33 norms are applied per farm, which includes 26 norms, or 78.8 percent, that are technically sound. It has been established that in the Ural region there are 9640 milkers working according to norms that are underestimated by 10.7 percent. The overexpenditure of wage funds is sizable--1392 rubles per year. There is a similar situation with the livestock workers tending the milk herd: 3568 of them work according to norms, which are underestimated by 16.4 percent against fixed standards. They are overpaid by 746 rubles. At the same time, part of the livestock workers are working according to overestimated norms. There are 2676 milkers with norms overestimated by 10.3 percent, and 1506 livestock workers with a 15.4 percent overestimate. For one farm in the region, the overpayment for one year is in excess of 1080 rubles, and in Sverdlovsk Oblast, it is 2030 rubles. Underpayment due to incorrect application of norms is 572 and 1585 rubles for these areas, respectively.

Why does this occur? In a number of kolkhozes and sovkhoses, there are no plans for setting labor norms, and at farms where such plans exist, many of the regulations are not fulfilled. Specialists at the farms rarely conduct the time and motion studies that are necessary for calculating time norms in animal husbandry and for studying the expenditure of work time in a shift and establishing rational breakdowns of its utilization. Also, the studies are often inefficient and the methods and processing of the data are inadequate. This task is frequently assigned to people who are not conversant in questions of norm setting, records are not kept according to the established form and records are not kept for the entire shift. Standard norms are revised and changed without the appropriate analyses.

In practice, materials at farms for their certification are not analyzed and are not refined at the proper time, even though they make it possible to reveal and systematize factors that determine norms. It should be noted that there are not enough reference books of standard norms at the farms themselves; only 34.7 percent of all Ural farms are provided with them, and only 16.6 percent of all farms in Udmurt ASSR have them. It has also been revealed that the interconnections between economic and livestock specialist services on questions of setting norms for labor are weak. Furthermore, few specialists take courses on setting labor norms. This is especially true for livestock specialists. Between 1977 and 1979, only 59 percent of them took special courses; in Perm Oblast, this figure was even lower--35.6 percent. The result of all this is that livestock workers do not make rational use of their work time (Tables 1 and 2).

When setting labor norms in animal husbandry, it is essential to take into account its peculiar features. The work day is often broken up: farm workers are put in charge of animals for an extended period of time, and therefore labor expenditures on the same operations change with the time of year; in addition to daily operations, there are one-time or periodic jobs (veterinary measures, weighing, calving, and so on).

The basic factors that determine norm setting in this sector are the type of animals, their sex, age, productivity, production purpose, the system for maintaining them during different times of year, their duration, the type of feeding and watering, the means of milking, the size of the livestock facilities, level of mechanization, and forms and methods of labor organization. Various combinations of these factors present organizational and technical (organizational and technological) variations in carrying out operations, for which fixed time standards are first worked out, and then norms for maintenance of the animals. It is difficult to conduct the necessary number of day-long studies for working out norms using the farms' specialists. Therefore, as a rule, norms for maintaining animals are determined with the help of reference books containing standard labor norms. Of course, it is impossible to work out standard norms for all the organizational and technical variations in maintaining animals that are found in kolkhozes and sovkhoses, and there is no need to do this.

When the norms are not found in the reference books, the specialists work them out themselves, using the fixed standards of time for separate labor processes.

But they are not always applied correctly. For example, in 1981 workers from the Ural Regional Scientific Research Station conducted studies at six base farms: the "Bogdanovichskiy" (Sverdlovsk Oblast), "Lugovskoy" (Perm Oblast), "Tobol" (Kurgan Oblast), "Uspenskiy" (Tyumen Oblast), and "Chebar-kul'skiy" (Chelyabinsk Oblast) sovkhozes, and the kolkhoz imeni Kirov (Orenburg Oblast). Only 57.8 percent of the norms were being applied correctly. Overpayment of wages at the farms due to low norms accounted for 37,600 rubles, and underpayment totalled 52,300 rubles.

Let us consider as an example the production conditions and organization of labor at the Il'yinskiy dairy farm at the "Bogdanovichskiy" sovkhov in the Bogdanovichskiy rayon, Sverdlovsk Oblast. It has 3 buildings (2 with 200 stalls, the third is a calving area); there is a dispensary and a calf house for young up to 4 months old. Care of the cows is assigned, milking is done with a portable milking apparatus, manure is removed with a TSN-3B conveyor and loaded onto a tractor truck, and feed is dispensed with a mobile unit (KTU-10). Milkers work one shift in a two-cycle work day.

An analysis of time and motion studies following the actions of two milkers revealed the following violations: the first streams of milk were not collected; the udders were not massaged energetically enough; mechanical milking was not always done completely or correctly. The time intervals between cleaning the udder and attaching the milking apparatus exceeded the norm. These intervals varied between the milkers: from 0.5 to 2 minutes. It was also noted that the milk containers were held too long on the udder.

In other words, milking one cow requires more time than provided for in the norms. This can be explained by the relatively low sanitary condition of the cows, as well as by the distance between the milk collection building and the work site of the milkers (Table 3).

Under the present production conditions, the workload for each milker is 50 cows, which is 13 more than the norm. The results of the time study lead to this conclusion.

The proportion of time spent on milking in the milkers' shifts is 38.3 percent, which indicates the low specialization of their work. With year-round equal calving of dairy cows it will be 39. If a milker conscientiously fulfills all her responsibilities, her work day will be over 9 hours long, since she performs a number of operations which could be handled by other workers. It should also be taken into consideration that with the existing technology at the sovkhov for maintaining the cows (individual assignments for each milker), it is difficult to provide standardized feeding of the animals. Therefore the recommendations of the workers from the Ural Regional Division of the All-Russian Scientific Research Institute of Economics, Labor and Management of Agriculture, who conducted research here, are correct: there should be a transition to a separate group system for maintaining the animals, taking into account their physiological condition, which will provide favorable conditions for rational technology and organization of labor.

At the "Krasnaya Zvezda" kolkhoz in Baykalovskiy rayon, Sverdlovsk Oblast, in 1981 50 time and motion studies were conducted in the livestock section. Technically sound norms here account for 76.9 percent of the total (this includes 75 percent for milking machine operators and 50 percent for operators in charge of servicing the KRS). In the maintenance of the dairy herd at this farm, certain organizational and technological variations are employed: the animals receive water through an automatic watering apparatus, milking is done with a double apparatus into buckets or into a milk pipeline (at one farm), feed is delivered by a horse that has been loaded manually, feed is distributed by hand from a feeding aisle or TVK-80 (where there is a milk pipeline), manure is removed with a TSN conveyor, and in one place it is carried away by horse.

The results of the time and motion studies are presented in Table 4.

In the time norms for preliminary and final operations of the milkers, the following was considered: preparing the cows for milking (bringing the apparatus and implements to the milking spot, obtaining warm water, putting on overalls); cleaning the milking apparatus and buckets, carrying them to the dairy; rinsing towels; washing hands; removing overalls.

At the "Krasnaya Zvezda" kolkhoz, more than twice as much time is spent on these operations than is provided for in the norms. This is a result of the long distances that the milkers must carry the implements and water, and the length of time spent on washing the milking apparatus, which the milkers do not do properly.

But the majority of the milkers' time is spent on operational activities. Their work begins with obtaining concentrated feed and potatoes. Then they distribute the feed (concentrated feed, potatoes, silage, grass meal, straw, chalk, salt). The milkers also tie up and untie the cows, sending them out into the enclosures for exercise and grazing. Milking itself occupies only 41.2 percent of their time. Losses in work time per shift reach 1 hour and 9 minutes, or 15 percent. Over the course of the year, 60 norm-shifts are lost. Furthermore, milkers carry out functions that are not specific to them: they clean stalls, manure and feed aisles, feed troughs, and they often take care of odd jobs, such as removing water from under the feed troughs. There is a great deal of idle time due to organizational causes.

The norm for milkers at the kolkhoz is 26 cows to care for. If distribution of silage and cleaning of manure and feed passages were eliminated from their responsibilities, their workload could be increased to 31-34 cows, thus freeing up 6 milkers.

The work day for livestock workers in charge of feed delivery begins at 8 am and ends at 2 pm. Here the losses in work time reach 57 minutes a day per person, and in a year, 49 norm shifts. The norm for livestock workers established at the farm is 44-55-60 animals to tend, but it actually is 48 animals. If the fixed standards were adhered to, 6 people would be freed up.

The shift length for fitters at dairy farms is 7 hours 4 minutes. They spend 62 percent of the shift time directly on servicing technical equipment; lost

time accounts for 21 percent. Their service norm is 400 animals; at the farm it is 200 animals. Introduction of technically sound norms would free up 2 people. In dairy cattle raising as a whole, over 9 people could be freed up. But this is possible only with elimination of idle time and with a more precise division of labor among the workers.

We recall that in 1981, standardized technological charts for operations in dairy farming were published to aid economists, livestock specialists and those in charge of norm setting at kolkhozes and sovkhoses in the central Ural region. They were developed by a collective of specialists in management of agricultural production of the Sverdlovsk oblispolkom and scientists from the Ural Regional Division of the All-Russian Scientific Research Institute of Economics, Labor and Management of Agriculture, the Sverdlovsk branch of the Center of Russian Agricultural NOPTU, and the Ural Regional Normative Research Station. Time norms and technological charts are a source for normative planning of labor and wage expenditures in dairy farming. They are differentiated according to the methods used to maintain the animals, and the available means for feed distribution, watering, cleaning the facilities and removal of manure. With their help, the most acceptable variation for performing one process or another can be selected, and norms for livestock workers' labor can be set objectively enough.

**Table 1 Utilization of Shift Time by Livestock Workers in Ural Regions 1976-1980**

<u>Oblast</u>	<u>Average Shift Time (hrs)</u>	<u>Time Spent (percent)</u>		<u>Total Idle Time (percent)</u>
		<u>normed</u>	<u>not normed</u>	
Sverdlovsk	8.0	88.7	11.3	11.3
Kurgan	7.7	94.8	5.2	5.2
Chelyabinsk	8.0	88.7	11.3	11.3
Orenburg	7.7	85.2	14.8	14.8
Perm	8.3	91.6	8.4	8.4
Tyumen	6.7	79.1	20.9	20.9
UASSR	8.1	95.6	4.4	4.4
Average	7.9	89.9	10.1	10.1

**Table 2 Utilization of Work Time by Livestock Workers in Ural Regions 1981**

<u>Specialization</u>	<u>Average Shift Time (hrs)</u>	<u>Time Spent (percent)</u>		<u>Idle Time (percent)</u>
		<u>normed</u>	<u>not normed</u>	
Workers caring for young animals KRS	7.7	99.1	0.9	0.8
Milkers	8.1	91.2	8.8	8.8
Fitters (equipment repair and manure removal)	7.2	85.2	14.8	7.0
Pig tenders	9.8	94.8	5.2	5.2
Calf tenders	7.6	83.4	16.6	16.6
Tractor Operators	8.2	100.0		
Average	8.46	94.5	5.5	4.0

**Table 3** Expenditure of Work Time for Mechanical Milking of One Cow Using Portable Buckets

Technological Operation	Time (minutes)	
	Farm Average	Norm
Cleaning and Massage of Udders	1.0	0.75
Attachment of Milking Apparatus	0.33	0.62
Supervision of Milking	0.2	0.1
Mechanical Final Milking	0.56	0.46
Turning off Milking Apparatus	0.26	0.25
Pouring off the Milk	0.31	0.2
Carrying Milk Away	0.9	0.4
Total	3.56	2.73

**Table 4** Utilization of Work Time by Milking Machine Operators at the "Krasnaya Zvezda" kolkhoz in Baykalovskiy rayon, Sverdlovsk Oblast

Indicator	Time Expenditures			
	Actual minutes	percent	Norm minutes	percent
A. Standardized Time	391	85	420.0	100
Preliminary and Final Time	60.8	13.2	30	7.1
Operational Time:	324.7	70.6	380.0	90.4
Feeding	83.1	18.1	94.3	22.5
Grazing and Exercise	15.6	3.4	24.3	5.8
Milking	189.4	41.2	147.0	35.0
Veterinary Measures	1.3	0.3	9.1	2.1
Organizational and Technical Services	35.3	7.6	105.3	25.0
Personal Needs, Rest	5.5	1.2	10.0	2.5
B. Non-Standardized Time	69	15.0	--	--
Odd Jobs	2.8	0.6	--	--
Idle Time Resulting from Organizational Causes	66.0	14.4	--	--
Total Work Time	460.0	100.0	420.0	100.0

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## Grain Production Labor, Wages Organization

Krasnodar SEL'SKIYE ZORI in Russian No 7, Jul 82 pp 20-21

[Article by V. Uvarov, senior economist at the division of organization of labor and wages of the agricultural administration of the Rostov oblispolkom, and V. Kuznetsov, director of the division of methodology of labor planning and social development of collectives of the All-Union Scientific Research Institute of Planning and Norms of the USSR Ministry of Agriculture: "Contracts for Grain Growers--The Unit is the Master of Field and Farm"]

[Text] At many farms in the Don region, the job contract plus bonus system of wages with time rate credits has been successfully utilized. In Millerovskiy rayon non-job order units and brigades have been working successfully and improving for over 15 years. Introduction of this type of wage system has contributed to the fact that agricultural production at local kolkhozes and sovkhozes has been growing at a faster rate than in neighboring rayons. Data on the yields of grain crops provide confirmation of this (see the table below).

### Forms of Labor Organization and Grain Crop Yields (quintals per hectare)

<u>Rayon</u>	<u>Predominant Form of Labor Organization</u>	<u>1966-1970</u>	<u>1971-1975</u>	<u>1976-1980</u>	<u>1981</u>
Millerovskiy	Non-job order units and brigades	13.9	16.0	17.2	13.4
Chertkovskiy	Tractor-field brigades with piece rate credits	14.4	15.6	15.6	11.7
Kasharskiy	" "	14.0	14.7	15.6	11.9
Tarasovskiy	" "	14.1	14.4	14.9	11.1

In the 8th Five-Year Plan, a hectare of grain gave practically an identical yield in all these rayons. However, in the 9th and 10th Five-Year Plans, thanks to the introduction of progressive forms of labor organization, workers in Millerovskiy rayon achieved higher rates of growth per hectare of grain harvested.

A study of the work results of 342 units on a piece rate credit system in 23 rayons and 132 non-job order units in 20 rayons in different regions of Rostov Oblast showed the undeniable advantages of the latter system in all basic indicators.

In mechanized units on the job contract plus bonus system of wages, there is a combination of a high level of interest and responsibility on the part of the collective and each worker for utilization of land and equipment and for high crop yields, growth in labor productivity is maintained as are incentives that are dependent on the quantity and quality of products obtained.

The average composition of these and the other collectives is more or less identical; the unit with time rate credits has on the average 7.6 manual and 6.5 conventional tractors, and the unit with piece rate credits has 8.4 and 6.9, respectively.

In units with time rate credits, over 90 percent of all the operations are carried out using the unit's own forces, and in piece rate units, only 61 percent of the work is done this way. In the oblast, one unit on the time rate credit system can cultivate on the average 1325 hectares, which is 17 percent more than a collective on a piece rate credit system. And one tractor operator works 130 and 111 hectares, respectively. In the oblast, gross production per 100 hectares of land in non-job order units is 20,400 rubles, which is 4000 rubles (20 percent) more than units on the piece rate credit system. The yield per hectare of grain is 2.1 quintals more. Production per one tractor operator is 26,700 and 18,400 rubles, respectively, which represents a 31 percent difference.

In Zernogradskiy rayon, for example, 8 units on the time rate credit system were analyzed, and a tractor operator produces 50,100 rubles' worth of grain, while in 18 collectives on the piece rate credit system, a tractor operator produces only 24,100 rubles' worth. Even in those rayons where the share per tractor operator is lower than the average for the oblast, in the non-job order units this indicator is higher. In Tarasovskiy rayon, it is 30.8 percent higher, and in Rodionovo-Nesvetayskiy rayon, it is 27.3 percent higher.

In units on the time rate credit system, the average gross production per man-day is 22 percent higher than that in units on the piece rate credit system; in Martynovskiy rayon, it is twice as high, and in Aksayskiy rayon, three times higher.

Thus, in units on the time rate credit system, tractor operators are more productive, work time is used more efficiently than in units on the piece rate credit system.

Gross production per ruble of wages paid in units on the time rate credit system is 21.3 percent higher than in units on the piece rate system and reaches 16.4 and 12.9 rubles, respectively. In Morozovskiy rayon, this indicator for units on the time rate credit system is four times greater than in the other units, while their wages per man-day are only 16.3 percent higher. In Martynovskiy rayon there is a two-fold difference and a 3.5 percent difference, respectively. In Zernogradskiy rayon wages per man-day in units on the piece rate credit system are higher compared to those in the non-job order units, but production per ruble of wages paid is higher in the latter (by 30.4 percent); this is also the situation in Belokalitvenskiy rayon.

Farm managers and specialists often name as a reason for poor implementation of the job contract plus bonus system, the tractor operators' objection to working under this system because the wages are supposedly lower. An analysis shows that in the non-job order units in the oblast as a whole, wages are higher. According to data from several years, with the time rate credit system (in the left column below) and with the piece rate credit system (in the

right column below), the following wages were charged (in rubles):

per unit	16,491	14,182
per man	1,411	1,205
per man-day	8.35	8.29

In spite of all the obvious advantages, non-job order units still have not received broad implementation throughout the Don region, although in certain years over 1000 of them have been created. There are hidden objective, as well as subjective reasons for this: the attitude of managers and specialists at farms and agricultural agencies toward this new form of production and labor organization, production peculiarities connected with its seasonal character and the effect of unfavorable weather conditions, the complexity of applying the job contract plus bonus wage system which requires correction of contract estimates, and a number of other conditions.

And still, the main reason lies, first and foremost, in the approach to this important issue. In some kolkhozes and sovkhozes, where there is a constant searching for improved forms for organization of labor, creation of non-job order collectives is seen as the beginning of the reorganization of the entire mechanism of management. And at others, they decided, "We'll create the non-job order units and everything will automatically work better." They form these collectives hastily and then say, "Work!" A year, or even less, passes and tens and hundreds of the collectives that were only nominally organized, collapse and it will be virtually impossible to return to this wage system.

Practice and scientific research show that the approach to creating self-sufficient collectives with a job contract plus bonus wage system and time rate credits cannot be the same as that taken for ordinary tasks. This is because human psychology is involved, as well as the long-standing, traditional habit of doing piecework. Therefore the creation of non-job order collectives must be started by working painstakingly with people and preparing the labor force of machinery operators for work under the new conditions. However, in practice these points are often forgotten.

Another important reason is the formalism and lack of desire on the part of farm managers and specialists themselves to get involved in this troublesome business, as well as a fear of trying new forms. After all, working according to the old methods hides many defects in the organization of production. At the same time, agricultural agencies are requiring creation of non-job order units, and farms report that they have formed the units while continuing to work on a piecework basis. Sometimes, in the race for quantity, they forget about quality. And after all, the main point is not the quantity of non-job order units, but the efficiency of their labor. It is important that a self-sufficient collective be master of the land, not in word, but in deed.

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## Agricultural Management Forms Discussed

Moscow SEL'SKOYE KHOZYAYSTVO NECHERNOZEM'YA in Russian No 6, Jun 82 pp 4-8

[Text of "Round Table" discussion organized by editorial staff of SEL'SKOYE KHOZYAYSTVO NECHERNOZEM'YA, which included A. S. Ponomarev, chairman of the kolkhoz imeni 20th Party Congress in Kostroma Oblast; V. A. Surgutskiy, director of the "Tuchkovskiy" sovkhoz in Moscow Oblast and candidate of jurisprudence; N. V. Gerasimov, head of the organization of labor and wages division of the agricultural production administration of the Kaliningrad oblispolkom; D. A. Krapivner, head of the organization of labor and wages division of the agricultural production administration of the Sverdlovsk oblispolkom; V. I. Gudkov, first secretary of the Saray CPSU Auditing Commission, Ryazan Oblast; V. I. Afanas'yev, chief economist of the Main Administration of Organization of Labor and Wages of the RSFSR Ministry of Agriculture; V. F. Bashmachnikov, deputy director of the All-Russian Scientific Research Institute of Economics, Labor and Management of Agriculture and candidate of economic sciences; and Yu. A. Petrushin, editor-in-chief of SEL'SKOYE KHOZYAYSTVO NECHERNOZEM'YA, who was also moderator of the discussion: "Management Tactics"]

[Text] The collective (brigade) contract...It is difficult today to find a sector of the national economy in which this form of organization and stimulation of labor has not been considered. Introduction of the collective contract not only increases economic efficiency, it is also tied to further democratization of production management and to expanding the rights and independence of enterprises.

Today there is no doubt about the progressive nature of the contract (non-job order) form of organization of labor and wages in agricultural production. Mechanized units, brigades and detachments working on a single order have spread broadly throughout the sector. In 1980 there were over 30,000 of these collectives working in the country.

In a speech at the 17th Congress of USSR Trade Unions, comrade L. I. Brezhnev emphasized the significance of brigades working on a contract. He noted, "By increasing production efficiency, they correspond completely to the economic strategy of the party at the current stage.

"In complex brigades working under one order, there is a significant economy of time, manpower and material resources. The discipline is stronger, the wages higher, and young workers learn to master skills more quickly. And, of course, labor productivity is higher as well.

"I would say that a well-organized brigade that is working efficiently, intelligently, is a true school for developing management skills in workers and is an experimental laboratory for any creative initiative. Members of such a brigade, in their work, in their daily joint labor, possess economic as well as political knowledge that is so essential in our time. In this type of brigade a true sense of being master of one's plant, master of one's country, is forged."

However, in the oblasts and autonomous republics of the Nechernozem'ye region this system is just beginning to gain a foothold. We will name those who are boldly developing the contract system: the Sarayevskiy rayon in Ryazan Oblast, Molokovskiy rayon in Kalinin Oblast, Plavskiy rayon in Tula Oblast, Kaliningrad Oblast, individual farms in Kostroma, Kaluga and Moscow Oblasts. The others, which are in the majority, are still sizing up this important matter.

In the last two years our editors have published a number of articles on the work of non-job order units in Moscow, Kostroma, Ryazan and other oblasts. Letters to the editor indicate that this topic raised by the journal elicited broad public response. Therefore it was decided to continue the discussion of pressing questions at a "round table" organized by the editorial board.

The following people were invited to participate in the discussion: A. S. Ponomarev, chairman of the kolkhoz imeni 20th Party Congress in Kostroma Oblast; V. A. Surgutskiy, director of the "Tuchkovskiy" sovkhoz in Moscow Oblast and candidate of jurisprudence; N. V. Gerasimov, head of the organization of labor and wages division of the agricultural production administration of the Kaliningrad oblispolkom; D. A. Krapivner, head of the organization of labor and wages division of the agricultural production administration of the Sverdlovsk oblispolkom; V. I. Gudkov, first secretary of the Saray CPSU Auditing Commission, Ryazan Oblast; V. I. Afanas'yev, chief economist of the Main Administration of Organization of Labor and Wages of the RSFSR Ministry of Agriculture; V. F. Bashmachnikov, deputy director of the All-Russian Scientific Research Institute of Economics, Labor and Management of Agriculture and candidate of economic sciences; and Yu. A. Petrushin, editor-in-chief of SEL'SKOYE KHOZYAYSTVO NECHERNOZEM'YA, who was also moderator of the discussion.

[Moderator] New times give rise to new, more effective forms of managing production. Today we will be talking about the collective contract, under which labor is evaluated according to final results. One of the goals of our meeting is to try to consider from various angles the advantages of this type of organization of labor and wages over individual piecework. But we cannot discuss this without naming the true reasons behind the inadequacy of the latter. These reasons are well-known to everyone. Allow me to read an excerpt from a speech given by I. S. Shikhov, candidate of economic sciences, who, it seems to me, clearly and accurately named these reasons. "By separating material stimuli from the final product, from the harvest, the individual piecework system turns a tractor operator into either an indifferent day-laborer or a self-seeking violator of the land. It limits the worker's initiative from all angles: in terms of time, it is limited by the norm; in terms of content, by the volume of work assigned; in terms of economic interests, by immediate earnings. Not only does the harvest suffer, so does the human spirit. And although the countryside has never before been as well off as it is now, more people are still leaving for the cities. This is probably because to be happy, a man needs more than just a comfortable existence, free from want; he needs to be a true master in production, to think, plan, and take risks; in other words, he needs to play a game of chess with nature, not just a game of give-away."

[A. S. Ponomarev] I am in complete agreement with that. Yes, our working man is master of his life. The very nature of our society is based on this principle. With the individual piecework system a production situation is created which gives rise to an immoral attitude toward the main source of life--labor. The low CUA [coefficient of useful activity] of tractor operators under these conditions is a result of the fact that their earnings are hardly dependent on the harvest. Only intermediate indicators, tractor operations, play a role here. They try to "ring up more hectares on their wheels" (one can't help but make a comparison to taxi drivers) and to snare the "profitable" jobs. But this contradicts the moral principles of our society! Today we are justifiably gratified when a man, in collaboration with his machine, performs what is essentially a revolution in the fields. We say, "Wonderful! Marvelous!" But the tractor operator does not see the fruits of his labor. In industry, a worker can at any time see what his hands have created. In agriculture, this process can take a whole year. You must agree, this is quite a long time to wait. And it is worth the long wait only if you go through the entire cycle of agricultural operations and at the end you can put your palm under the grain cascading from the conveyor and say to yourself: Here is the grain that I grew!

Taking all this into account, back in 1968 our kolkhoz converted to a system of non-job order units. We did not simply make the conversion; we did cost accounting and made the units independent entities, sole masters of the land, means of production and planned expenditures. The transition, however, was not simple. Many questions arose that were tied to creating such units.

[Moderator] On what principles are non-job order collectives formed? It would be useful to hear the opinion of the majority of those present at our meeting. Let's start with science. What do you have to say, Vladimir Fedorovich?

[V. F. Bashmachnikov] A well-founded definition of the specialization, size and composition of the non-job order subdivisions is of great importance. In light of the diversity of conditions involved, there are no simple solutions. The most general rules for organizing non-job order collectives are based on a generalization of advanced scientific methods: members should be given jobs for cultivating the assigned crops, including preparation of equipment, and the majority of their work time (no less than 70-80 percent), so that the summer earnings of each member are based on fulfillment of the basic production goal; the number of workers, as well as the number of tractors, agricultural equipment and implements assigned to the collective must guarantee prompt performance of all agricultural operations and not allow any losses of work time; the number of workers in the collective should be sufficient to perform 65-70 percent of the mechanized field work using their own forces, and should not exceed 12-15 people; tractor operators should be included in the unit or brigade voluntarily, taking into account their desire to work jointly under the conditions of a collective contract; the most experienced and authoritative worker should be designated (or better, elected) to be the unit or brigade leader. I know that many people are interested in the question of what type of collectives these should be--narrowly specialized to 1-4 crops or should they

cultivate all crops in the crop rotation. We believe that both of these options are possible.

[N. V. Gerasimov] Vladimir Fedorovich, in our oblast non-job order units for growing cultivated crops were started some time ago. They played a definite role in increasing the harvests and in the growth in labor productivity. But not all of them have provided the expected progress in farming. There are still some of them operating successfully, but a good number of them have collapsed. There are many reasons for this, but the main ones are their small size and the impossibility of providing the tractor operators with a uniform amount of work in the assigned fields. The result was that the tractor operators were drawn to work outside of the unit, and the unit was forced to bring in outside workers. In these cases, the work done by those outside workers was paid for on a piece rate basis, which is, as you know, higher than the daily advance payments for the unit's members. Two forms of wages from the single general unit fund resulted, the majority of which was not paid out to the unit, thus infringing upon its interests.

This question is being resolved successfully in large collectives growing all the crops in the crop rotation. In them, everyone has work over the course of the entire year. Tractor operators have an average of 60-80 hectares of crops. This is the volume of work that we have adopted.

[V. I. Gudkov] At a number of kolkhozes in our rayon the personal selection of tractor operators for inclusion in non-job order brigades is conducted on the basis of sociological research that we have done, which allows us to take into account the desire of every worker to work in a new manner and to work together with others. We have also directed attention at the ability of tractor operators to work on two or three different models of tractors and to cultivate different types of crops. As a rule, one person is assigned no fewer than two pieces of equipment, but over the course of the year, depending on production needs, tractor operators work on tractors of various models. This has made it possible to expand the interchangeability of tractor operators and has guaranteed them field work. And of no less importance is the fact that this kind of universality develops the abilities and opportunities of every member of the brigade.

[V. I. Afanas'yev] At this meeting I will talk about the development of the collective contract at farms in the Millerovskiy rayon of Rostov Oblast. Although this is not a non-Chernozem region, the experience of introducing the non-job order organization of labor and wages in this large agricultural rayon, which was approved by the Collegium of the RSFSR Ministry of Agriculture, will be useful for everybody. The most efficient form of work under the circumstances turned out to be permanent units of complex mechanization consisting of 10 to 12 people. They were assigned land within the boundaries of crop rotation, as well as the necessary equipment. Using their own forces, they carry out 80 percent of the operations for crop cultivation and harvesting. The workload for one person is 144 hectares; under the piece rate system, it was 53 hectares.

[Moderator] The most perfect management system will not function normally without the corresponding ideological support. Therefore, we are convinced that before high results are achieved by non-job order collectives, immense educational work must be developed in the farms.

[V. I. Gudkov] Our specialists have developed a comprehensive analysis of brigades' activities which makes it possible to see each tractor operator and the collective as a whole in light of economic indicators, and to calculate the labor contribution of each member, which is very important in distributing supplementary payments for production and in educational work. The following indicators are analyzed: the degree of utilization of work time and reasons for absences; the level of fulfillment of output norms for each type of field work and on the average; labor discipline; formation of a brigade wage fund, which takes into account a comparison between the actual charges for the volume of work completed and the advance payments that have been made; reasons for bringing in outside tractor operators or for releasing their own members for other jobs.

[D. A. Krapivner] I think that those of us from Sverdlovsk have a word to say about all this. I would like to direct your attention to two important points which, as our experience has demonstrated, determine the efficient operation of non-job order units. The first is assigning a wage category to the tractor operators in the unit. We have a commission consisting of the farm's chief specialists to carry out this task; they base their decisions on the following points: how long the tractor operator has been working, his theoretical knowledge and practical skills, work experience on various models of tractors and attitude toward labor. I should mention that the tractor operators themselves are given the right to answer this last question. They fill out forms with such questions as: Does your comrade have a conscientious attitude toward his job? Can he be trusted with important work? Have there been mechanical failures? What type of labor discipline does he demonstrate--is he late for work, does he have unexcused absences? How does he relate with his comrades, and so on. And now for the second point: the distribution of wages based on the coefficient of labor participation--the CLP--which is arrived at by dividing the normative time allocated for completing a certain volume of work by the time actually spent. Both these indicators are determined by the unit's members when distributing the wage fund. For many years we have not heard of one case of unfavorable criticism on the part of the tractor operators. On the contrary, this system generates enthusiasm and destroys the atmosphere of inertia, complacency and stagnation.

[V. I. Afanas'yev] Incidentally, I would like to note that the coefficient of labor participation, according to the Model Provision on wages, is a total quantitative evaluation of the labor contribution of each worker, that is dependent on individual labor productivity, quality of work, assistance provided to other members of the unit, observance of labor and production discipline. Utilization of this coefficient makes it possible to distribute supplementary payments and bonuses more objectively.

[V. A. Surgutskiy] When a man's labor can be seen by everyone, his sense of professional pride is satisfied more fully, tractor operators strive to master

their work more completely and to acquire a higher level of skill. Constant maintenance of this situation, under which a person's place and position in the collective are determined first and foremost by the results of his labor, is a necessary condition for opening up all the possibilities for the broad masses of workers in sovkhozes and kolkhozes.

[Moderator] Drawing regular workers into management of production is a pressing problem in the further development of agriculture. In the collectives that we are discussing here, the members themselves decide how to organize work time, how to evaluate diligence and involvement in the labor process of one tractor operator or another, and they also resolve questions of discipline in production, behavior in everyday life, and so on. We have all witnessed how our ideas about democracy have expanded. Members of units and brigades are attracted by the opportunity to participate in management, here at its most fundamental stage--the organization of labor. However, under the contract conditions, the wage system for tractor operators is of no less importance. The campaign for high final results--harvest, product quality, increased labor productivity, economy of resources--depends to a great extent on this system.

[V. F. Bashmachnikov] Allow me to remind you, Yuriy Andreyevich, that the inadequacy of the wage system is what substantially slowed down the spread of the contract system for units and brigades. Up until recently, the share of supplementary payments and bonuses for production in the total wages of tractor operators was only 6-8 percent. In other words, the income of the sector's principal workers--the tractor operators--practically did not depend on the final results of the field work. This is what generated their negative attitude toward collective wages for production. The reason for this situation was the dependence of the production estimates on the plans for crop yields that were systematically overstated in the majority of the country's oblasts. This flaw has now been eliminated. In the decree of the CPSU Central Committee and the USSR Council of Ministers "On Improving Planning and Economic Incentives for Production and Procurement of Agricultural Products", there is a recommendation to brigades and units working under a collective contract system to use the crop yields that have actually been achieved in the last 3-5 years as the criteria for evaluation, not the planned yields. But the problem has not been solved completely. In our opinion, the goal is to bring the share of supplementary payments and bonuses for production in tractor operators' yearly wages to 30-40 percent. This can be achieved if all future increases in the wage levels of agricultural workers made in the process of its intersectorial regulation are carried out through an installment above the wage rate.

[V. I. Gudkov] Here is what our wage system is like. A brigade signs an agreement with the management of the kolkhoz which clearly outlines the rights and responsibilities of both sides. Over the course of the year, tractor operators receive time rate credits, differentiated according to the type of job: field work, transportation, and repair work. The credits are paid per day worked, the length of which is established at the kolkhoz, and under the condition that the norm has been fulfilled or the shift quota has been met. At the end of the agricultural year and when the production that has been

grown is credited, there is a final settlement with the brigades on the contract estimates. The estimates are not corrected during the final settlement. Supplementary payments for production are apportioned by the credits paid over the course of the year, taking into account the brigades decisions and the labor contribution of each tractor operator. A "Provision on Wages" has been worked out in the rayon, which defines the system for payment of credits over the course of the year and the system for settling up for final production.

[V. F. Bashmachnikov] Charging current wages and credits is not a simple matter either. Distribution of supplementary payments and bonuses among the workers depends on this. In practice, equivalent time rate credits are charged to the members independent of the size and composition of the collectives. However, a scientific summary of practical experience done at our institute showed that this system of advance payments can be applied successfully only in large collectives consisting of workers with approximately the same skills. In situations where differences in skills and attitudes toward labor are maintained, an equal advance payment leads to wage-leveling and intensifies tensions in relations within the collective.

[Moderator] I want to emphasize what is apparently an indisputable point--that the job contract plus bonus wage system is the foundation on which the contract system in agriculture is based.

[V. I. Afanas'yev] In one of his press interviews, L. A. Chuprinin, first secretary of the Millerovskiy CPSU rayon, very accurately described the primary content of the job contract plus bonus wage system, which has strengthened the role of collective wage systems in the production process as well as in final results. The secretary said, "The essence of the job contract plus bonus system is that workers who take a conscientious approach to their work receive a guaranteed monthly wage, or as we say, a credit, at the level of their wage rates, regardless of the production results for the given time period. At the end of the economic year wages are charged to them depending on the quantity and quality of the production that has been obtained. The higher the yield, the larger the bonus paid to the tractor operator. If fuel or equipment repair means have been conserved, then a specific percent will be paid as supplementary payments. In this way the job contract plus bonus wage system combines personal and public interests. There is a direct relationship between production obtained and earnings.

[V. A. Surgutskiy] When they receive a firm time rate credit, tractor operators do not try to increase output at the expense of quality, since each operator knows that his labor will be evaluated with the final results, and he will be paid according to these results and according to the yield.

[N. V. Gerasimov] In a non-job order collective there is a real opportunity to increase the influential role of basic cost accounting principles in production results, primary among these principles is material incentives. Last year our tractor operators' wages for final production turned out in all cases to be higher than the piece rate wage. Members of non-job order units received 15-40 kopecks per ruble of earnings, and per time rate credit they received between 1 ruble and 1 ruble 40 kopecks. Tractor operators in other subdivisions did not receive this kind of supplementary payment.

The cost accounting mechanism requires correct allocation of supplementary payments among the collective's members for work well done. This is possible only with a fair, objective evaluation of the labor contribution each member has made to the total work results. Our kolkhozes and sovkhozes have applied the coefficient of labor participation to make this kind of evaluation. It seems to me that the CLP has not been given the attention it deserves in our discussion. This new indicator for evaluating the tractor operators' work is also tied to economic and social aspects of the activities of agricultural enterprises. Under our conditions, the CLP is formed from four indicators: coefficients of fulfilling shift output norms and utilization of work time, as well as labor discipline and equipment operation. The last indicator is based on the relationship between the days spent on tractor repairs and the total work time for the year. The higher the CLP, the larger the monetary compensation for the harvest. Allocation of income in non-job order units is something new. We do not claim that our system is ideal. The main thing is to create conditions so that people doing poor work and shirking their duties cannot find loopholes for high earnings. And this is essentially being done.

[V. I. Gudkov] This year at 19 kolkhozes in our rayon there are permanent non-job order units of tractor operators functioning, with an average of 2500 hectares within the boundaries of the crop rotation assigned to each. There are 10-17 tractor operators in a brigade, doing all the field work with their own forces. A brigade is given a cost accounting production assignment. It includes a formal document which assigns the brigade land and equipment, agricultural technology for cultivating each assigned crop, a plan for yield and production of crops, limits on expenditures for seeds, fuel materials, and equipment repair. In the eight years of working in non-job order brigades, the tractor operators have grasped firmly the main point: the higher their production output, and the less they spend on it, the more beneficial it is to them personally. The interest of each person in the common success has made them work better and more productively.

[Moderator] Signals coming from the floor testify to the fact that in some places the contract system is being limited by introduction of collective evaluations for production and time rate credits while ignoring the cost accounting independence of the units; equipment and fertilizers are not being supplied on time or in sufficient quantity; tractor operators are diverted to other sections; and the wage fund is being spent arbitrarily.

[D. A. Krapivner] Perhaps it would be advisable to develop a model agreement for the contract system, which would clearly define the rights and responsibilities of the unit, brigade and farm management. The agreement should define the limits on outlays of labor, financial and material resources for each unit of production, as well as other indicators. Of course, this is possible only under conditions of intraorganizational calculations.

[Moderator] So, we have established that the positive results of non-job order organization of labor are achieved through a closer relationship between compensation and the quantity and quality of work performed, which is revealed in the size of the final product.

[V. A. Surgutskiy] I would like to add that the interest in the final labor results should be understood in a much broader sense than just material interest. In doing his own work which is needed by society, a person wants to earn more and be deserving of more respect in the collective, and he wants to see the real fruits of his labor. Practice has shown that in evaluating work according to the final results, we also evaluate the attitude toward labor more accurately. And this corresponds more fully to the social and psychological status of those whose labor is being evaluated. Thus, both payment of wages and evaluation of labor according to final results make it possible to have a more effective influence on increasing agricultural production.

I also want to emphasize that one of the most important elements of paying wages according to final results is its simplicity; it can be easily understood by the members of the production collective. As early as 1921, in the Decree of the Council of People's Commissars, "The Basic Position on the Wage Question", signed by V. I. Lenin, it was pointed out that "The system for calculating wages should be simple and clear enough so that the connection between productivity and wages can be understood by every worker and employee." In our opinion, the job contract plus bonus system with time rate credits before the final results are calculated corresponds most completely to these requirements. This system should be implemented in such a way that the benefit of an individual worker is also a benefit for the entire unit in which he works, and the benefit of the unit is a benefit for the entire sector and for the economy as a whole.

[Moderator] Many of the participants at our meeting have emphasized that the progressive system generates collectivism--the concern for the common good which unites people. Today it is clear to everyone that our economy cannot be based fully on material incentives alone.

[N. V. Gerasimov] That is absolutely right, and the non-job order system's strength is more than just monetary. With the new organization of labor, the fields have received a zealous manager, a collective of the best tractor operators. In this kind of collective there is trust and comradely mutual assistance, and a high sense of responsibility to one's fellow members. Here many social questions are resolved. The collectives are given full independence not only in resolving production questions, but also in resolving moral problems, such as punishing those who violate production and technological discipline. If someone has an unexcused absence from work or he is performing his work poorly, he must answer to this comrades. For this purpose, a meeting of all the unit's members is held at least once a month. A tractor operator is included in the collective if his colleagues give their approval. Therefore he strives to work according to the laws of honor and conscience in order to warrant his comrades' trust. It should be noted that there have been some noticeable changes in people's attitudes toward their work. In many collectives failure to fulfill output norms and unexcused absences from work have become rare.

[V. I. Gudkov] Rayon party organizations are constantly controlling the work of the brigades. There are quite a few communists among their ranks. A great

deal depends on how they work--the conditions in the collective, its mood, and therefore also production indicators. Establishing a creative atmosphere in a brigade is a primary task of kolkhoz party organizations. Brigade leaders are confirmed by a bureau of the party raykom. There are regularly held rayon seminars to discuss the brigades' work results, to analyze their errors, and to exchange experience. The rayon newspaper and radio systematically provide information on the state of affairs in the brigades.

[V. M. Afanas'yev] In Millerovskiy rayon implementation of the contract system has also been put under the special control of the party organization. The transition to the new organization of labor and wages has required a great deal of explanatory work and the psychological barrier had to be overcome: it is one thing for a tractor operator to work on his own and to be paid for fulfilling the norm, and the brigade contract is something else. It was tested first in several units. Their example convinced other tractor operators of the advantages of the new system, and managers and specialists learned from the example. At the same time, the skills of the personnel were increased, the composition of the tractor and machinery fleet was improved, as was its technical maintenance; the necessary climate within the collectives was created and conditions for socialist competition were improved.

[Moderator] As they say, numbers speak better than words. Let's talk about the achievements of the non-job order collectives in terms of numbers.

[N. V. Gerasimov] That is a good suggestion. Allow me to begin. At the "Perelesskiy" sovkhos in Kaliningrad Oblast the entire crop farming shop has been converted completely to the brigade contract system: in place of the tractor-field cultivation brigades, two non-job order detachments were formed, each consisting of 21 tractor operators. They were assigned all the crops, meadows and fields. There was a 20 percent decrease in the number of people engaged in crop cultivation, all the field operations were carried out in a more organized manner and the quality of work improved. All this had an effect on the harvests. A. I. Aver'yanov's unit harvested an average of 26 quintals of grain per hectare, 310 quintals of corn for silage and 45 quintals of perennial grasses for hay. The quota for volume of production was exceeded by almost 9 percent; the quota for hay production was exceeded by a factor of 1.2. Two units conserved 27 tons of fuel for the year.

This was accomplished thanks to the well-organized work of the tractor operators and their high labor productivity. The gross production per tractor operator in the sovkhos grew to 11,000 rubles over the year, as opposed to 7500 rubles. Each member of the unit fulfilled the output norm by 101 percent, as compared to 79 percent before the introduction of the non-job order system. The shift output per tractor was 8.6 hectares of conventional land, with a norm of 7 hectares. This is equivalent to freeing up 8 tractors. A high level of efficiency was achieved by non-job order mechanized units in the complete crop rotation at the "Zales'ye" and "Zagorskiy" sovkhoses and the "Voskhod" imeni Il'yich and the "Vpered k kommunizmu" kolkhoses. Production per worker at these farms increased by 30-50 percent and their crop yield surpassed the rayon and oblast levels. The self-sufficient mechanized unit of the "Zagorskiy" sovkhos last year worked with a high degree of productivity and stability.

They harvested 27 quintals of grain per hectare, which is a two-fold increase over the rayon average, 51 quintals of hay from perennial grasses, and 400 quintals of root crops.

[A. S. Ponomarev] Our kolkhoz has a unit headed by Yu. N. Sirotkin, a communist; it consists of 7 people and it is assigned 1900 hectares of land. The spring sowing plan is for 720 hectares. I will give you some more numbers. The average annual production level in the 10th Five-Year Plan was as follows: over 1500 tons of grain, up to 10,000 tons of silage, 150 tons of hay; and over 200 tons of straw. More than 10,000 tons of organic fertilizers are spread on the fields. I think that it is clear to all of us that this volume of production for seven people is gratifying and can only be admired. The average annual output per worker in the unit reached 17,742 rubles, and for the kolkhoz it was only 13,167 rubles. This is the same output you will find in any other farm without the unit system for organization of labor. Thus 7 people, applying their skills and ability, provide a year-round complete supply of feed for 1500 head of cattle. Doesn't this prove that it is not numbers, but skills that are needed? And no matter what kind of tricks nature plays on them, the members of Yu. N. Sirotkin's non-job order unit work regularly and without interruption.

[N. V. Gerasimov] Allow me to add to this. The differentiated approach to evaluating tractor operators' work provides the conscientious workers with what they deserve. So, the outstanding tractor operator at the "Perelesskiy" sovkhov, the young communist, V. D. Chernetsov, who has the highest coefficient of labor participation, is paid a sum based on the harvest that is three times higher than that paid to N. A. Yevseyev, another tractor operator at the farm.

[V. I. Gudkov] What benefits has the contract system brought to the kolkhoz imeni Komintern, for example? The grain output grew from 21.2 quintals per hectare to 27, the sugar beet yield is 250-300 quintals (there are 700 hectares of this crop), and 350 quintals of silage corn are obtained per hectare. Each of the non-job order units has a yearly gross production of over 1 million rubles and the output per man-day is between 270 and 300 rubles. One tractor operator has a yearly output of 70,000 rubles.

[Moderator] I have before me the work results of the best non-job order collectives in Kalinin Oblast. V. I. Zharov's unit from the "Rossiya" kolkhoz in Bel'skiy rayon in 1981 obtained a flax yield of 9.7 quintals per hectare for conversion into fabric, and 5.9 quintals per hectare of flax seed. N. F. Zvonarev's unit from the "Za mir" kolkhoz in Sandovskiy rayon obtained 264 quintals of potatoes from each of their 70 hectares; A. A. Grigor'yev's brigade from the "Krasnyy Oktyabr" kolkhoz in Sonkovskiy rayon obtained 32 quintals of grain per hectare. And the collective of the cost accounting non-job order unit led by Anatoliy Chistyakov, Hero of Socialist Labor and winner of the USSR State Prize, has produced a rich harvest many years in a row, regardless of whether the year was rainy or excessively dry.

[V. I. Afanas'yev] Extensive experience over a 12-year period in working with complex mechanized units on the job contract plus bonus wage system and time rate credits has been accumulated at the "Rassvet" kolkhoz in Millerovskiy

rayon; it specializes in growing grain and industrial crops. The unit headed by the rayon's distinguished tractor operator, Zinaida Vasil'yevna Nikolenko, serves as an example. The collective of 10-12 people is assigned field crop rotation of 2059 hectares, 7 tractors, 3 grain-harvesting combines and other tractor-drawn implements. Last year the yield of grain from each of the 620 hectares was 30.9 quintals, which included 48.4 quintals of millet from each of the 100 hectares planted. The grain yield for the rayon as a whole was 21.4 quintals per hectare.

[Moderator] The issue we are discussing today is difficult and complex and it needs enthusiasts. There are already quite a few of them today. For example, there is Sergey Vasil'yevich Bakulin, communist and chairman of the kolkhoz imeni Komintern in Sarayevskiy rayon, who created the first non-job order units in the Ryazan area and Anatoliy Stepanovich Ponomarev, chairman of the kolkhoz imeni the 20th CPSU Congress, an ardent champion of the non-job order system in the Kostroma region.

[N. V. Gerasimov] We also have people like that, Yuriy Andreyevich. You are correct in calling them enthusiasts. In our oblast we have, first and foremost, R. A. Odintsova, chief economist at the "Perelesskiy" sovkhoz; and A. F. Vodyanitskaya and D. N. Kryukova, chief economists of the Pravdinskiy and Chernyakhovskiy rayon agricultural administrations, who have done a great deal to implement the new system.

The practice of recent years has convinced us that in order to be successful in implementing the new system of organization of labor and wages, the managers and specialists of the farms must study its essence in depth. At the "Slava" sovkhoz in Krasnoznamenskiy rayon there was poor preparation for the new methods, the management was disorganized and indifferent, and as a result, the good start made by the tractor operators died out. The non-job order system was rejected here and they returned to the piece rate wage system. This type of step backward is not desirable.

[Moderator] This was pointed out by comrade L. I. Brezhnev in his speech at the 17th Congress of USSR Trade Unions; he noted, "Unfortunately, not all managers exhibit a striving to provide a brigade with the necessary working conditions, they don't take their share of the responsibility. Also playing a role are shortcomings in the organization of production, as well as conservatism of thought. All this undermines the very essence of the brigade system, its cost accounting basis.

"Consequently, in order to give the cost accounting brigades a 'green light', we must continue to reorganize the management mechanism, improve material and technical supply, and fight against formalism in planning and in evaluation of labor."

It is certainly advisable for the brigade system to be implemented in stages. This is being done at farms in Kalinin Oblast. At first the benefits of the new system are demonstrated in the experience of one unit. When it becomes clear to the others that in non-job order units high results can be achieved with sufficient material interest, then no one will need to be talked into it.

[V. F. Bashmachnikov] The fact that the contract system is being implemented in the region slowly is due to a number of factors. These include an over-estimation of the possibilities of administrative management methods, an under-estimation of the educational role of primary labor collectives, and an inability to utilize social and psychological methods of influence in working with people. Therefore it is essential to improve substantially the practice of teaching managers progressive methods and styles of management. Perhaps the "Recommendations for Organizing Tractor Operators' Brigades and Units under a System of Collective Wages for Production" that we have prepared for publication will help. Then the collective contract will be the means which serves to increase labor activity and initiative of the workers directed at improving final results of their work in the fields.

[Moderator] Our meeting's participants understand, of course, that in spite of the huge advantages of the non-job order system for organization of labor and wages, we cannot say today that some kind of universal means has been found that is capable of delivering production from all its complexities and problems. The matter is, without a doubt, progressive, but it is not simple. We need further work in improving economic operations, we need to increase their role in production management, we need to bring the interests of public production closer to those of members of non-job order collectives. There are still many problems, but we must not fear them; we must solve them.

I thank all the discussion participants and I wish you creative successes.

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#### Tractor Operator Organization

Minsk BELO RUSSII in Russian No 10, Oct 82 pp 6-7

[Text] The machinery and tractor operators of the "Novyy put'" kolkhoz in Rogachevskiy rayon live and work in good spirits. In recent years at the kolkhoz, well-planned settlements have been built and roads have undergone major repairs. A good operation and repair base for agricultural equipment has been established here. There is a well-organized machinery yard. The shop is supplied with all the necessary equipment for the repair and technical maintenance of the machinery. A permanent repair brigade has been organized. The tractor operators regularly receive hot meals and overalls. After work they can take a shower and use the steam bath.

The kolkhoz helps the workers build new houses and auxiliary buildings. There is running water for both the public and individual housing. All homes are supplied with gas. There are 2 physician's assistant-obstetric stations and 2 postal branch communications offices on the farm's territory and in every village there is a club and a library. The trade and everyday services for the kolkhoz workers are well organized.

And there is one more condition. The management of the kolkhoz and the teaching collective of the local school are constantly carrying out well-thought out

work to keep graduates in agricultural production. The farm's specialists meet regularly with school pupils to tell them about the farm's present and future and to try to awaken in them an interest in their parents' work and a feeling of responsibility for the growth and development of their village. It is gratifying that the tractor operators' force has begun to grow younger, it is being filled up by young operators and drivers.

There is no need to prove that the purposeful work of the management and the party organization to create the proper conditions for labor, everyday living and rest for the people shows in the results of the economic activities of the labor collective. Productivity in crop farming and animal husbandry at the farm is constantly growing. Although the natural fertility of the farm's land is rated at only 26 points, up to 40 quintals of feed units are obtained per hectare. Almost 1000 quintals of milk and over 200 quintals of meat are produced per 100 hectares of farm land. Every year the efficiency in all sectors of production increases, monetary income grows, which is a major condition for expanded reproduction of the farm's economy.

Practice shows that in a collective of tractor operators whose composition is stable, it is easier to acquire and utilize production experience, improve knowledge and skills, develop the workers' creative activity, and achieve a high level of organization and effectiveness in socialist competition. Constancy among the tractor operators' force helps to achieve not only high production results, but also a high level of social development in the collectives of kolkhozes and sovkhoses, and creates in them a favorable moral and psychological climate.

As a result of the successful realization of the party's agrarian policies and implementation of major measures directed at accelerated development of the agro-industrial complex, the material and technical base of kolkhozes and sovkhoses grows stronger every year, and flow line and industrial methods and progressive technology for agricultural production are being incorporated. In the last 15 years alone the capital funds of the republic's kolkhozes and sovkhoses increased by a factor of 4.6, the capital-labor ratio increased by a factor of 5.5 and the fuel supply by a factor of 4.2. The machinery and tractor fleet grew by a factor of more than 2. Today there is an average of 40 tractors and 10 grain harvesting combines per farm. The quantity of other equipment has also increased significantly, which makes it possible to mechanize production processes more completely, to convert all sectors of agriculture to an industrial basis consistently, and to implement more broadly better forms for organization of labor.

As leading experience shows, in many farms group methods for operating equipment and creation of sowing and harvesting and transportation detachments and units have become the norm. The collective contract system is being incorporated more and more extensively in crop farming and animal husbandry. Active work is being conducted to improve overall technical maintenance of machinery and equipment at the republic's kolkhozes and sovkhoses. All this has a positive effect on the increase in labor productivity and in reducing the direct labor costs for production of one quintal of grain, potatoes, meat, milk and other products.

Profound transformations in agriculture were outlined by the May (1982) Plenum of the CPSU Central Committee, which approved the USSR Food Program up to the year 1990. Large financial and material resources will be allocated to agriculture. The most important task of the day is to make maximal use of capital investments and obtain a high return on fixed capital in each kolkhoz and sovkhov. This task can be resolved successfully only with the sufficient number of educated and skilled machinery operators.

For this reason party organizations, managers and specialists at kolkhozes and sovkhovs, and agricultural administrators must increase their attention to increasing the number of workers at each farm who are capable of operating complex contemporary equipment at a high level of efficiency and are able to carry out progressive technology competently in various sectors of agricultural production. It is well known that the technical and chemical means used in agriculture which are growing every year, and the introduction of high-intensity crop varieties and breeds of animals change the technology and organization of production, as well as the character of the labor itself. The final results in every production subdivision of kolkhozes and sovkhovs depend today to a great extent on the tractor operators. It is important that farm managers everywhere have a good understanding of this fact and that they do everything that is necessary to increase the operators' knowledge and their ideological and moral maturity, and to develop in them a sense of high responsibility for the work at hand.

The sovkhov imeni Uglovskiy in Vitebskiy rayon has acquired some instructive experience in working with tractor operators. Work with future grain-growers here begins with solid ties with the school; the farm managers and outstanding workers meet regularly with the children and tell them about the sovkhov's work and plans. This all has good results. Over the last five years, 70 of the graduates have remained on the farm. A great deal of attention is given to young tractor operators; they are provided with means for building their own homes and are helped with building materials. Ties are maintained with young workers while they are serving in the army. Young people, as a rule, return to their native areas, because they are concerned about their lives, and are sure that they will be able to work in their chosen trade and that they will have good living conditions.

We could offer many similar examples. But there are also farms in the republic that are experiencing shortages in their force of tractor and machinery operators. There are many of these kolkhozes and sovkhovs in Pruzhanskiy, Verkhnedvinskiy, Dubrovskiy, Klimovichskiy, Khotimskiy and Polotskiy rayons, where there are only 70-90 tractor and machinery operators for 100 tractors. In these and a number of other rayons, certain important agricultural operations are not carried out at the appropriate time, such as procurement of feed, preparing the soil for planting spring and winter crops, the autumn plowing, and so on. All this has a negative effect on the final results of the kolkhozes' and sovkhovs' economic activity.

The fact that tractor and machinery operators leave the rural areas is explained first and foremost by shortcomings in the work to provide them with normal living and working conditions. Some farm managers still show little

effort to see that a tractor operator is content not only with his job, not only with his working conditions, but also with the conditions of village life. Practice shows that young people willingly go to work where there are kindergartens and nurseries, complete receiving centers, and a normal level of service in cultural and health care institutions.

In many cases, the fluctuation in the force of tractor and machinery operators can also be explained by the fact that there is not the proper level of storage, repair and technical maintenance of the machinery and tractor fleet at all farms. The Agricultural Equipment Association in many cases fails to supply kolkhozes and sovkhoses with spare parts and repair materials regularly. This disrupts the operators' work, leads to equipment idle time, and lowers the coefficient of utilization of work time.

The proper attention to improving the organization of the operators' work, increasing their skills and strengthening labor discipline is not given everywhere. The Provision on Wages for Young Machinery and Tractor Operators is often disregarded and privileges provided for by law are not always granted.

Similar facts have a negative effect on the mood of the operators, they cause dissatisfaction, and lead to a lower level of prestige in the profession and to fluctuation in the work force.

There is an urgent demand in life for effective work to eliminate shortcomings in the organization of labor and the everyday life of the operators. Active work of party organizations, agricultural administrations and the managers and specialists of the kolkhozes and sovkhoses should be directed at this goal. A task has been set: taking into account the conditions at each farm and in each rayon, a concrete program should be developed and implemented for training and keeping machinery and tractor operators in the rural areas. Special attention must be given to economically weak farms. It is important to accelerate work on building new apartments and homes and on reconstruction of existing ones. A great deal of attention must be directed to building children's pre-school institutions, cafeterias, dormitories and other projects for cultural and personal purposes.

It is necessary to regulate the organization and routine of operators' work in each farm. The brigade contract system should be implemented extensively in collectives of machinery and tractor operators, as should the experience of the "Mir" sovkhos in Shaturskiy rayon, Moscow Oblast, in assigning operators days off according to a sliding schedule.

It is very important to create in each kolkhoz and sovkhos the creative conditions which promote the development of the operators' social activity and initiative. It is especially important to develop these qualities in young operators who are just beginning their working life. It is necessary to notice and support promptly the valuable undertakings of young people, to instill in them a spirit of confidence in their strengths and abilities and to help each young man and woman assimilate the experience of the celebrated masters of kolkhoz and sovkhos production.

Questions of training and keeping the machinery and tractor operators in the rural areas demand of the farms' managers and specialists daily, thoughtful work. There are many problems here, and they are all interconnected. A complex approach is needed for their resolution. It is important that they not be overlooked. Practice shows that at those farms where these processes are well-managed, the problems can be foreseen, and as a rule, the necessary number of highly skilled workers is provided.

As was emphasized at the 3rd Plenum of the CPBe Central Committee, there must be broader incorporation of the experience of leading farms, where a high proportion of non-production fixed capital makes it possible to resolve successfully problems of social development, which helps to keep specialists from various professions, especially the young people, on the farm. Questions of regulating the work time of the tractor and machinery operators, of their communal and everyday needs, and of leisure time for young grain-growers, should constantly be in the field of vision of farm managers.

Questions involving the vocational training of the operators require daily concern and attention. Today each farm needs not only workers who are able to carry out certain operations in the required time period, but real masters, who have a creative approach to their work and who have a sound understanding of the principles of agricultural production.

In many kolkhozes and sovkhozes, however, first and second grade operators comprise less than half of the total number. This situation has a negative effect on the level of crop cultivation and on the final production results. It is the duty of farm managers and specialists and rayon agricultural administrations to demonstrate constant concern for increasing the professional level of the personnel in the popular vocations. There must be broader utilization everywhere of instructional forms such as seminars, courses, and schools for advanced methods, established on the basis of the best farms. The knowledge and experience of machinery and tractor operators offer one of the most important resources for increasing labor productivity and production in each kolkhoz and sovkhoz.

It was pointed out at the May (1982) Plenum of the CPSU Central Committee that today the machinery and tractor operators are the decisive force in contemporary agricultural production. For this reason, questions of their training and education, creating for them the necessary conditions for highly productive labor, everyday life and leisure, should be at the center of attention of party organizations, agricultural administrations and kolkhoz and sovkhoz managers and specialists constantly.

An increase in the efficiency of utilization of the machinery and tractor fleet of kolkhozes and sovkhozes depends on each and everyone to whom the contemporary equipment has been entrusted. It is a matter of honor for each tractor and machinery operator and each rural worker to know how to handle the equipment well, to constantly increase his mastery, to obtain the highest level of productivity from each machine, and to make one's worthy contribution to fulfilling the Food Program.

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## Collective Forms of Labor Organization

Minsk SEL'SKOYE KHOZYAYSTVO BELORUSSII in Russian No 10, Oct 82 pp 24-25

[Article by N. M. Tishchenko, candidate of economic sciences and acting assistant professor at the Belorussian Agricultural Academy; and N. P. Ivanitskiy, senior instructor: "The Basic Form of Labor Organization"]

[Text] Today in agricultural enterprises, mechanized brigades whose members work under conditions of a collective contract based on cost accounting calculations, are becoming the basic form of labor organization.

The CPSU and the Soviet government see in the development of this form of cost accounting terms a great resource for increasing the efficiency of national production. In the Decree of the CPSU Central Committee, the USSR Council of Ministers and the All-Union Central Council of Trade Unions "On Further Strengthening of Labor Discipline and Reducing Fluctuations in the Labor Force in the National Economy" (1979), there is discussion of the need for a consistent transition to collective forms of organizing labor and wages.

Mechanized brigades with collective forms of labor and wage organization have already been created at a number of kolkhozes and sovkhoses in Belorussia.

The experience of these farms shows that in the mechanized brigades there is an increase in labor productivity, labor discipline is strengthened, as are attitudes of collectivism and mutual assistance, and a healthy social and psychological climate is created.

The formation of such brigades in kolkhozes and sovkhoses, however, is still proceeding slowly.

One of the factors delaying incorporation of progressive forms of labor organization under the conditions of the brigade contract is inadequate knowledge of many of its aspects.

The contract is a form of cost accounting terms under which the performance of various types of operations, production output or construction is realized on a basis of mutual interest on the part of both the customer and the person performing the work (the contractor).

Proceeding from the concrete conditions and nature of the production, a contract is applied in various organizational forms. A kolkhoz or sovkhos, as a rule, acts as the customer. The workers (the contractors) are individual workers or a separate collective. Therefore a contract can be collective or individual. In turn, a collective contract can be for a brigade, a detachment or a unit. It is determined by the forms of labor organization that are in effect at the farm.

The object of the cost accounting terms in the contract can be either separate types of operations, or a combination; or production of one or several types of products.

The essence of the collective contract in agricultural production lies in the fact that collectives of workers (mechanized brigade, detachment, unit) take on responsibility of producing a harvest from the land that has been assigned to them, which is, as a rule, no lower than the planned indicators. The customer, the kolkhoz management or sovkhos directors, are obligated to pay for what is produced according to established contractual quotations. The customer must also create the necessary conditions for the workers to perform their jobs efficiently, they must be provided with equipment, seeds, fertilizer, and so on.

In light of the fact that the kolkhoz or sovkhos is closely involved with the workers, the farm itself can form the primary labor collectives out of their own able-bodied workers, it can ensure their activity, implement control over the operations being performed, and provide the necessary help.

A special feature of the collective contract system is that it is based on a close connection between the worker's earnings and the final results of the collective labor.

Personal and collective interests are combined most successfully in the brigade contract system, since production subdivisions (brigades) that have a high level of independence and organizational stability are being converted to this progressive form of labor and wage organization.

As our analysis shows, the brigade contract system is implemented more effectively in collectives consisting of 16-25 people.

To avoid wage-leveling, wages are paid according to differentiated time rate credits, taking into account the job and wage rates classifications, coefficients of labor participation (CLP), tractor models, and so on. Material incentives are provided on the basis of a graduated scale of progressive evaluations.

Brigades are formed on a voluntary basis, taking into account the desire of its members to work under the new conditions of labor and wage organization.

Kolkhozes and sovkhoses in Belorussia still do not have a great deal of experience in the application of the brigade contract system. But the results of the work that has been done are already showing a positive effect. There are increases in the production output per tractor operator, the crop yields are increasing and costs per unit of production are decreasing. At the "Druzhba" kolkhoz in Dobrushskiy rayon in 1981 a mechanized brigade, working according to the principles of the brigade contract system, had a gross production output per tractor operator that was 34 percent larger than in the brigades not working under this system, the output per tractor was 10 percent higher, and the cost per hectare was 3.32 rubles, as opposed to 4.72 rubles for the kolkhoz as a whole.

Currently the brigade contract system is being introduced at farms in Goretskiy rayon. In making this transition, the experience acquired in the organization and management of labor and wages in the initial labor collectives is being taken into account.

Broad application throughout the rayon of the Ipatovo method led to a certain degree of specialization among machinery and tractor operators. During the period of intensive harvest work, they perform 5-7 types of operations, instead of 12-15 types under the individual daily production quotas.

Specialization among the operators is especially evident in division of labor by operation when mechanized operation units are formed to carry out specific types of work (operations) in mechanized brigades. When certain types of operations have been fulfilled, the units are reorganized, while the composition of each unit is kept at its maximum. This division of labor among operators has great advantages, the major ones being increases in the grain-growers' skills and labor productivity, decreases in the time spent on operations, and elimination of the need for each operator to be supplied with an entire set of cultivating machinery.

The division of labor by operation and high specialization among the operators are absolute necessities today. Contemporary technology for cultivating many types of crops and carrying out certain types of operations require a high level of skill in the workers and an improved mastery of their work.

The suggestion that the most skilled operators must be selected for the mechanized brigades is wrong. In our opinion, these operators should be in each detachment, unit and group, so there will be a rational combination of age and experience, and the experienced workers can act as mentors for the young and less experienced operators.

A situation has developed in the practical experience of many brigades working under the collective contract system: the operators must not only perform all the cultivation operations, they must also repair and maintain the equipment themselves. Under field conditions, without the proper means, this is impossible, especially if you are operating a "Kirovets", T-150K, MTZ-82 tractor, or others. In a number of kolkhozes, special mechanized units for technical maintenance of the machinery and tractor fleet have been created and are functioning, which makes it possible to carry out these operations on a high level of quality.

Thus, it becomes necessary to combine the accumulated experience in labor organization under the brigade contract system.

Division of labor according to operation has its drawbacks. An operator who is engaged in carrying out specific types of work has little interest in the final results. The brigade contract system eliminates this drawback.

The kolkhoz imeni Sverdlov in Goretskiy rayon has acquired considerable experience in improving management of production and incorporating progressive forms for organization of labor and wages. This is a large farm. It covers a total area of 8655 hectares, including 6972 hectares of land suitable for farming and 4380 hectares under cultivation.

The improvements in the organization of labor at the farm have been made in stages since 1970. There used to be 9 complex and 4 tractor brigades at

the farm. The brigades were assigned from 290 to 584 hectares of land. Production, especially in crop growing, was scattered. There were 40 sectors occupied with barley, 15 with potatoes and 17 with perennial grasses.

In the process of implementing intraorganization specialization and concentration of production between 1971 and 1972, a three-step organizational structure with production sectors was introduced at the farm.

Increasing the crop rotations fields and construction of large livestock farms made it possible in 1977 to convert to 4 crop rotations with 200-hectare fields. The basic form of labor organization became a large mechanized brigade for one crop rotation.

This reorganization made it possible in 1977 to increase gross production per 100 hectares and per 1 man-day by 56 and 115 percent, respectively, over the 1970 level; gross income increased by 73.2 and 82.3 percent, respectively, and net income increased by a factor of more than 2.

In the third stage of the improvement of the farm's management in 1978, the shop system of management was introduced. The field brigades were eliminated in crop growing. A mechanization shop was created with three mechanized detachments. Each detachment was assigned a crop rotation with an area of 1340, 1500 or 1600 hectares. In all the detachments mechanized units are formed for performing certain types of work. When needed, units are created not only for the mechanized detachments, but also for general farm purposes and are then joined to the corresponding complexes. In 1981-1982, 3 mechanized complexes were formed for carrying out agricultural operations: spring sowing, feed procurement and harvest and transportation.

The sowing complex consists of 9 basic and 2 auxiliary mechanized units in each detachment; they include one for soil preparation, application of mineral and organic fertilizers, seed supply, sowing of grain, flax, corn and feed root crops, and for technical and cultural and everyday services.

The complex for feed procurement consists of 2 mechanized units (one for procurement of hay and one for supplying green forage) and in each detachment there are units for procurement of hay, silage and for providing the farms with feed.

The harvest complex includes 4 farmwide harvest and transportation units for processing the grain after it is harvested, for harvesting straw and flax, and for the autumn plowing and winter sowing.

Upon completion of various types of operations, the units are reorganized for other types. The original composition of the unit is kept at its maximum. So, the unit for flax sowing participates in preparing the soil for the planting, does chemical weeding and takes part in the harvest, but its composition is partially altered, depending on the time periods and volume of the operations.

Introduction of progressive forms of labor organization made it possible in 1981-1982 for the farm to do the spring field work in a shorter period of time and

on a high agrotechnical level, and to complete 1981 successfully. Last year the yield of winter crops at the farm was 35 quintals per hectare and the yield of spring crops was 22 quintals. Output from one conventional, standard tractor was 1480 hectares, as opposed to 1217 in 1980, with a cost per hectare of 5.52 rubles (the planned cost was 6.30 rubles).

Having worked out clearly a division of labor by operation for machinery and tractor operators, in 1982 at the kolkhoz 2 out of 3 mechanized detachments converted to the brigade contract with job contract plus bonus wage system and time rate credits.

The necessary conditions for this transition had been created at the farm. Not only was the experience of the leading kolkhozes studied, but they had also acquired their own experience: over a number of years collective forms of wages had been applied in one mechanized harvest unit. An analysis showed that in this unit the number of combine-days worked was 10-40 percent higher than in other units, idle time was decreased to one-third to one-fourth of what it was in other units and grain output increased by 30 percent.

Thus, the most progressive form of labor organization in sovkhoses and kolkhozes is the large mechanized brigade (detachment) for one crop rotation area, which includes mechanized units for carrying out certain operations under the conditions of the brigade contract.

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## LABOR

### PROBLEMS FACING SOVIET WORKING WOMEN DETAILED

Moscow RABOCHIY KLAS I SOVREMENNYI MIR in Russian No 6, Nov-Dec 82 pp 110-117

[Article by Ye.B. Gruzdeva and E.S. Chertikhina: "Soviet Women: Labor and Domestic Problems"]

[Text] The late Seventies and Eighties have been marked by further practical proofs of the concern of the Soviet state and the CPSU for working women. The constitution adopted in 1977 not only legally recognizes the equality of men and women but also provides for the creation of opportunities to insure social equality of the sexes and the favorable combination of professional, family and domestic and maternal roles for women.

In the development of the constitutional acts, party, government and trade union resolutions aimed at further improving the position of working women were taken into account, in particular, the USSR Council of Ministers and AUCCTU decree of 25 April 1978 "On Additional Measures To Improve Labor Conditions for Women Engaged in the National Economy," aimed at further improving the system of labor protection for women. In the execution of this decree, on 25 July 1978 the USSR State Committee for Labor and Social Problems, jointly with the AUCCTU and with the agreement of the Ministry of Health, confirmed a new list of production facilities, professions and work involving heavy or harmful labor conditions, in which the employment of women is banned. The USSR Council of Ministers and AUCCTU decree of 5 December 1981 "On the Introduction of New Standards for Maximum Permissible Weights for Women in Lifting and Moving Loads Manually" dealt with protection of the interests of mothers and children and improving labor conditions. The aim of extending opportunities for women's professional growth was served by the 21 June 1979 CPSU Central Committee and USSR Council of Ministers decree "On Measures To Further Improve Training and Improve the Qualifications of Workers in Production," in which women workers with children aged up to 8 years are given the right to undergo training and improve their qualifications while being given leave from work with retention of average monthly wages during the period of training. In the CPSU Central Committee and USSR Council of Ministers decree "On Measures To Strengthen State Aid for Families with Children" (March 1981), provision was made for additional measures to improve state aid for families with children, in order to insure a rational combination of public and family education, ease the position of working mothers, and create favorable conditions for family life and domestic arrangements.

Typically, in documents of recent CPSU congresses also, the problem of further improvements in labor and domestic conditions for women, and the combination of the duties of a mother with active participation in production and social life has been raised quite sharply.\* At the same time, achievement of decisive shifts in the position of women under the conditions of socialism in no way means that all contradictions in the field of social life have been overcome. The essence of healthy development under socialism lies not in the absence of contradictions but in their nonantagonistic nature.

In this connection it is of interest to examine the figures on labor and everyday conditions for women workers, obtained as the result of a sociological study of a typical industrial center, namely Taganrog city. The value of these figures is the greater since they include material from two studies conducted at an interval of 10 years, in the late Sixties and the late Seventies (the Taganrog-1 and Taganrog-2 research projects\*\*). A comparative analysis of the information gathered with this 10-year gap provides an opportunity for seeing both certain positive shifts in the culture and professional growth of women within the working class, and also the contradictions still retained in this area.

It is generally known that one indispensable condition determining work efficiency and quality is the general and professional standards of work cadres. The data from the sociological studies indicate that during the Seventies these indexes in working women rose substantially (see table 1).

It can be seen that the rise on the level of education in women took place during the Seventies largely through obtaining general secondary education. The basis of this process lies in making complete secondary education the standard, and obligatory for every Soviet citizen. There was a marked increase in the stratum of highly qualified women workers with specialized education. These figures also indicate that during the Sixties and Seventies equalization of the educational levels in men and women occurred. We note that the indexes characterizing education in the workers studied during the Seventies reflect

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\* "Materialy XXVI s'yezda KPSS" [Materials on the 26th CPSU Congress], Moscow, 1981, pp 54, 55, 104-105; "Materialy XXV s'yezda KPSS" [Materials on the 25th CPSU Congress], Moscow, 1976, pp 85p 217; "Materialy XXIV s'yezda KPSS" [Materials on the 24th CPSU Congress], Moscow 1972, pp 75, 144.

\*\* These studies were conducted in 1968 and 1978 by a number of scientific establishments, in particular the Laboratory of Social Statistics and the Sector for Social Development of the Working Class at the USSR Academy of Sciences Institute of International Workers' Movement led by L.A. Gordon and E.V. Klopov with the participation of the authors. The 1968 study was part of a comprehensive study of social problems in the population of a typical industrial city, undertaken at the initiative of the CPSU Central Committee Propaganda Department. The 1978 study is a repeat study conducted using a similar program. Data from the two studies are fully compatible.

general trends inherent in the rise in the educational level for the country as a whole (see table 2).

Table 1. Distribution of Workers Studied by Educational Level.

Education	Proportion of each educational group (as percentage of all subjects)					
	1968	women 1978	difference	1968	men 1978	difference
Primary	28	17	-11	28	14	-14
Incomplete secondary	44	37	-7	46	38	-8
General secondary	23	33	+10	18	30	+12
Secondary specialized, higher incomplete, higher	5	13	+8	8	17	+9

Table 2. Educational Level of Population Engaged in National Economy.  
(from materials of the population censuses 1970 and 1979)

Urban population of USSR with education	Women Workers			Male Workers		
	1970	1979	difference	1970	1979	difference
Primary	26	19	-7	28	16	-12
Incomplete secondary	40	33	-13	42	35	-7
General secondary	19	35	+16	19	35	+16
Higher, incomplete higher, secondary special	4	9	+5	5	11	+6

Source: "VESTNIK STATISTIKI No 2, 1981, p 63.

It is quite proper that the rise in the educational level of women, along with the further improvements in the material-technical level of social production, created conditions for increasing the number and proportion of qualified personnel among women workers. The data from the 1978 study show this; it can be seen from the figures that well-educated women workers make up more than half in professions distinguished by a higher complexity of labor requiring special training before the start of labor activity, while those possessing a quite low level of education dominate in occupations involving simple labor, where mastering of occupational skills is achieved directly in the work process. Thus, for example, in the professions of laboratory technician, computer operator, controller and others associated for the most part with the control, processing and storage of information and requiring special training before the start of work activity, the proportion of women workers with secondary (general and specialized) and higher education is 66 percent, and with incomplete secondary and lower education, 34 percent; and a similar picture (64 and 36 percent) is typical for occupations such as

clothing sewing foreman, hairdresser, cook, salesperson and others associated with services and requiring training before the start of labor activity. Meanwhile, among women subjects working as conductors in city transportation, nursemaids, cloakroom attendants at enterprises and establishments, and others, that is, engaged in simple manual labor not requiring training before the start of labor activity, 73 percent are women workers with incomplete or lower levels of education, and only 27 percent have secondary (specialized or general) and higher education.

All the same, it would be wrong to suggest, and today this is well known, that raising the level of education can automatically and spontaneously solve all the problems of improving the qualitative characteristics of labor by women. The rapid growth in the education of women has not been matched by a rise in the level of professional training and this has led to an imbalance in these characteristics in working personnel in terms of the existing proportion of women workers. Today women are engaged to a greater degree in qualified and low-qualified labor, while men are engaged to a greater degree in qualified and highly qualified labor. True, it should be noted that during the decade elapsing between the sociological studies the proportion of qualified personnel among women altered substantially: there was a substantial decrease in the proportion of women workers engaged in low-qualified labor, and in 1978 the proportion of qualified and highly qualified women workers increased to 64 percent against 34 percent in 1968, that is, it almost doubled. However, among male workers this index reached 88 percent against 81 percent. We see that despite certain positive shifts, the problem of inadequate qualifications in the labor of female workers remains.

However, it is not only and not so much that women workers are engaged primarily in the mass occupations of the middle and lower ratings. The keenness of the problem in our opinion is that marked differences exist between the application of labor by men and women both in the kind of labor which is defined as assimilating the achievements of the scientific and technical revolution and in labor involved at the apex of industrialization processes.\* Of itself, the presence of such a contradiction in the nature of the types of labor at the present stage results, as is known, from a certain unevenness in the development of the various sectors of the USSR's national economy, caused by the fact that in the past "we were forced to focus on the paramount task on which the very existence of the new Soviet state depended."\*\* Of course, this contradiction does not lie completely at the boundary between labor by men and women, but is to some extent inherent for the working class as a whole. However, it is not fortuitous that it affects precisely the position of women with the greatest keenness.

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\* For the classification of types of labor see "Sotsial'noye i kul'turnoye razvitiye rabochego klassa v sotsialisticheskoy obshchestve (Metodicheskiye i metodologicheskiye voprosy)" [Social and Cultural Development of the Working Class in a Socialist Society (Methodical and Methodological Questions)], Moscow, 1982, Part 1, pp 6-72.

\*\* Materials of the 26th CPSU Congress, p 39.

Under the conditions of accelerated industrialization, among the women filling the ranks of the working class, poorly literate and professionally untrained women workers predominated. Despite the enormous positive significance of recruitment of women into industry, right from the start this circumstance engendered a certain contradiction: a significant proportion of women workers even in industry in actuality finished up being engaged in various kinds of essentially preindustrial labor: manual labor, low-qualified labor, and sometimes physically heavy labor. Certain echoes of this contradiction are heard even now. Thus, according to figures from the 1978 study, 44 percent of the women workers studied were engaged in the simplest type of manual labor of the domestic type, as against 30 percent for men; 36 percent of women and 49 percent of men were engaged in occupations of the classical industrial-factory and flowline-conveyer types of labor; and finally, 20 percent of women workers and men workers were associated with occupations in which the effect of the scientific and technical revolution is felt most tangibly.

Today the keenness of the qualificational disproportions in the female labor force results not only from differences in the level of qualifications in men but also from a general predominance of industrial and scientific-industrial labor in society. Now, low-productivity manual labor is done not by a majority of the working class but only by a certain part of it, but among women workers, this type of labor is still widespread. When employment in unattractive manual labor was typical for the main mass of workers, it was felt less keenly compared with a similar situation in which a smaller proportion of workers are engaged in manual labor.

The above again underlines the extraordinarily great urgency in liquidating manual labor and low-productivity labor, not only on the economic and general social planes but also because of the need to insure complete, actual equality for women, which presupposes the rational utilization of their labor as an essential condition. As the intensification of production proceeds and there is further growth in the general and professional standard of the main mass of workers, working places, production facilities and the kinds of activities requiring low qualifications and poor professional knowledge will become increasingly considered a nonprestige sphere for the use of labor. Already, according to data from sociological studies, including the Taganrog studies, among those engaged in low-qualified labor, the larger proportion is made up of older workers. Women older than 45 make up 46 percent of workers with low qualifications, and among men workers, those older than 50 make up 42 percent of those engaged in low-qualified labor. On the other hand, the proportion of young people aged up to 24 does not exceed 15-16 percent. Moreover, young people's readiness to replace retiring workers engaged in low-qualified jobs is continually dropping. However, even in those production facilities where there are still adequate numbers of middle-aged and older workers, primarily women, prepared to do low-qualified manual labor, the situation cannot be considered normal. It is unlikely that today's young women, most of whom have a secondary education, will agree to take upon their shoulders the burden of unattractive manual labor in the future, when they reach a mature age. The sectors of social production in which a substantial proportion of unattractive labor is retained will soon find themselves in an extraordinarily difficult position. It is therefore part of the pattern

that in the program for social development during the Eighties drawn up by the 26th CPSU Congress, special significance is attached to improvements in labor conditions and to every possible contraction of manual labor, low-qualified labor and physically heavy labor, and to alleviating the conditions of these types of labor.\*

The sphere in which the labor of male and female workers is used also predetermines differences in the requirements for special professional training before entry into the labor life. And it is by no means fortuitous that, according to the figures from the Taganrog 1978 study, 73 percent women and 27 percent men are engaged in occupations that do not require special initial training, and in places where the mastery of occupational skills is achieved in no more than 6 months on-the-job apprenticeship. Among those working in places where special professional training of 1-2 years is essential (mainly on the basis of incomplete secondary education), the proportion of women workers is 45 percent, and of male workers 55 percent. As for working places with prerequisites for full-time training of 3-4 years to meet the requirements of future and present production, the proportion of women workers is less than 37 percent, while the figure for men is 63 percent.

In general, among the women workers in the Taganrog study, the proportion of those who had received professional training in training establishments was 1.5 times less than among male workers. This can be seen from the figures in table 3.

Table 3. Professional Training for Workers (percentages)

Category	Workers receiving profession training			
	On the job		In the vocational and technical education system, on courses, at tekhnikums	
	among women	among men	among women	among men
All workers studied	75%	59%	25%	41%
Workers aged 24 and younger	64%	51%	36%	49%

Whereas the ratio of workers receiving professional training within the system of vocational and technical education, on special courses and within the system of secondary specialized education, and of those trained on the job in production is 1:1.5 for men, for women the ratio is 1:3. The distribution of these forms of labor training among young people reflects definite positive shifts associated with the present development of the system of professional training, but it also shows that even among young women workers, acquiring professional knowledge through a short period of apprenticeship directly at the working place is still more prevalent than among young men.

\* Materials of the 26th CPSU Congress, p 107.

It is not surprising that as a result of these differences in mastery of a profession, a significant gap exists in the level of qualifications for work done by men and women even at the start of work; among workers aged 24 and less, the work is divided as follows:

	women	men
for ratings I-II	42%	14%
for ratings II-IV	54%	80%
for ratings V-VI	6%	6%

Participation in labor without receiving initial professional training, that is, the availability of working places, occupations and types of activity that entail the execution of quite uncomplicated production operations needing only low qualifications, hampers the elimination of low-qualified labor. Thus, the problem of gradually eliminating low-productivity, low-qualified physical labor should be resolved simultaneously by the further development and improvement of the system of professional training for working cadres.

The figures from the Taganrog studies make it possible to see definite shifts in the educational and professional-production standards of women workers, and at the same time to reveal the most acute factors in the continuing problem of inefficient use of labor among a certain proportion of women. At the same time, a poll of women workers in Taganrog shows that their attitudes toward their own work, their participation in production and toward social activity depend on employment at the various levels of qualified labor. Analysis of human attitudes in the sphere of labor activity seems to us very important. It could be said that, since they reflect public opinion, subjective assessments serve to underscore the reality of the above-mentioned problem. In this connection, it is noteworthy how the women workers themselves perceive the lagging of their professional training behind their educational level.

In answer to the question: "How, in your opinion, does your education match your work?" 80 percent of women workers gave a positive response. Nevertheless, at least one-tenth of women noted that they had a higher level of education than that required for the work they were doing. And those who thought that their education was higher than necessary made up 14 percent among low-qualified workers and was under 3-4 percent among qualified and highly qualified women. In most cases perception of this mismatch by the working women themselves can give rise to dissatisfaction with their labor and frequently prompts them to seek other more appropriate possibilities of work, thus exacerbating the problem of personnel turnover in conditions of labor force shortages.

Because of this, factors such as assessment by women workers of the nature of their own work, their degree of interest in it, and finally, their degree of satisfaction with their work, should also deserve special attention. It is gratifying that about 80 percent of women answered that they do get satisfaction from carrying out their daily labor duties. All the same, one-tenth of those women workers polled were not satisfied with their work, and about the same number of women found it difficult to answer the question. Here a definite correlation was noted between the nature of the labor and

the proportion of women satisfied with it: among women workers engaged in qualified and highly qualified labor, the proportion of those expressing satisfaction with their work was 85 percent, while among low-qualified women workers the figure was about two-thirds. It is quite obvious that the content of labor also largely affects its assessment by the workers. It is not fortuitous that among women workers carrying out qualified and highly qualified labor operations, 77 percent called their work interesting, while among those engaged in low-qualified labor, only 44 percent considered it interesting; 47 percent of qualified and highly qualified women workers thought their work monotonous, against 65 percent among low-qualified women workers. It can be seen that the proportion of answers characterizing satisfaction with the execution of daily labor duties and with a positive attitude toward work is greater where a high professional standard is required of workers, and markedly lower where low-productivity, primarily manual labor predominates.

The monotony and low content of labor operations carried out day after day often leads to a situation in which women workers do them purely mechanically, using habit and training with their hands, while deliberately distancing themselves from the work. It is not fortuitous that precisely this kind of "dismissal" of labor was indicated by 60 percent of low-qualified women workers, one-third of the qualified, and 7 percent of the highly qualified.

Employment of a significant proportion of women workers in low-qualified, manual work negatively affects their labor and public activities. On this plane it is not surprising that 90 percent of those engaged in qualified labor are involved in various forms of socialist competition, while only 70 percent of women doing low-qualified work are; among the middle-qualified and highly qualified women workers, 60-70 percent are shock-workers of communist labor, while the figure for the low-qualified is only 30 percent. We see that labor activity is quite closely related to the nature and complexity of labor: participation in qualified and highly qualified labor obviously favors mastery of the better qualities of the working class, namely high conscientiousness, initiative and responsibility.

The nature of the work done exerts no less an effect on the cultivation of one very important quality in the worker of the new type, namely the sense of being the master of social production. Formation of this quality in women workers engaged in different kinds of labor is illustrated by analysis of answers given to the question: "During the last year have you participated in working out the plan and in discussion of the plan for your enterprise, and in the collective agreement and the conditions of socialist competition?" A total of 60 percent of women workers answered in the positive. However, the degree of activity by women in solving production and social problems increases as the complexity of labor increases: among low-qualified women workers, the proportion of those participating in meetings and assemblies to discuss the above-mentioned matters was 52 percent, while among qualified and highly qualified women workers it was 68 percent.

The same correlation determines the development of the most active forms of participation in the affairs of labor collectives. The proportion of women

workers participating in drawing up pledges and plans at enterprises, speaking at meetings or writing for the press, offering proposals and so forth, could serve as an arbitrary index of the spread of such forms. Among qualified and highly qualified women workers this index reaches about 10 percent, but only 4 percent among low-qualified women workers. In the same way, 48 percent of women with middle- or high-qualifications carry out permanent or temporary social assignments at their place of work or residence or are involved in election work, while the figure for low-qualified women workers is 28 percent.

In general, among women engaged in low-qualified, manual labor, there are rather more who are dissatisfied with their work, have no interest in it, and stand aside from the life of the collective, than there are in other groups of workers. This situation is slowing down the free and comprehensive development of the personality in many women and holding back their growth and the manifestation of their abilities. It is natural that in the documents of the 26th CPSU Congress it was stressed that "liquidation of manual, low-qualified and heavy physical labor is not only an economic and but also a serious social problem. Its resolution means to eliminate the considerable barriers along the road of transforming labor into a primary requirement of life for each individual."\*

It is known that attitudes toward work and sentiments born in the process of the labor activity as it were add color to the shade of an individual's entire life's activity. It is quite natural that a high labor standard makes corresponding demands not only on the professional but also the general development of a worker. It is not fortuitous that among the women workers of Taganrog included in the 1978 study, of those engaged in qualified labor more than half have complete secondary and specialized (secondary and higher) education, while among women carrying out low-qualified work, they make up only one-third. The level of general and professional standards among workers to some extent forms the character of their nonproduction activities.

Since the entire tenor of life outside production is of a predominantly family nature, the features of everyday behavior, leisure, entertainment and cultural requirements result largely from the spiritual atmosphere within the family, and this is shaped under the effect of the general cultural development and professional status of its adult members. It is of interest to note that among the qualified workers in the Taganrog study, about one-third live in families where the adult members (or some one of them) has complete secondary and specialized (secondary and higher) education. Among workers engaged in low-qualified labor, such family members are present in only one-fifth of families. The figures on workers' nonworking time in Taganrog city clearly indicate a definite dependence of the nature of everyday behavior on the general cultural and professional development of the workers (see table 4 below). It is noteworthy that, say, within the time budget for qualified workers, the index for domestic work is somewhat lower than for women engaged in low-qualified labor. And this when in the group of qualified women workers there are more mothers with teenage children, for whom a higher level of domestic labor is typical. It is quite possible that a more precise uniformity for

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\* Materials on the 26th CPSU Congress, p 57.

qualified groups in terms of the family-age situation would enable us to see even more marked differences between qualified and unqualified women workers in terms of the duration of domestic labor.

Table 4. Housework, Time Spent with Children, Cultural Activities and Leisure among Taganrog Workers as a Function of the Level of Their Qualifications\* (hours per week)

Kinds of Time Spent	All Workers		Qualified Workers		Low-Qualified Workers	
	women	men	women	men	women	men
Housework	26.9	10.5	25.9	10.4	27.3	11.2
Time with children	4.8	3.1	5.1	3.2	2.8	2.0
Everyday cultural life	12.7	19.9	12.7	20.3	12.5	20.0
including:						
reading books, newspapers, journals	2.2	5.2	2.5	5.3	1.7	4.8
watching television	9.2	12.5	9.0	12.2	9.4	13.9
visits to cinema, theater, museums and other public exhibitions	0.6	1.1	0.6	1.1	0.5	1.0
study, self-education	0.4	0.7	0.3	0.6	0.6	0.2
hobbies and nonprofessional creative work	0.3	0.4	0.3	0.5	0.3	0.1
Open-air leisure and sports	1.0	1.9	1.3	2.0	0.6	1.5
Pursuits outside family	5.0	6.8	5.0	6.7	5.0	7.7
Public activities	0.2	0.3	0.2	0.4	0.2	-

\*Indexes for pastimes among workers in differently qualified groups are quite comparable since the probability of the influence of the youth type of daily behavior is about the same: nonfamily youth makes up 10-15 percent in both groups; 4-5 percent are young married couples with no children; 80-85 percent of those studied in these groups are parents of children under the age of 18, and middle-aged people. Among qualified workers, regardless of sex, a certain preponderance of parents is observed (the ratio is about 2:1), while among low-qualified workers there are rather more older individuals (in men 1:1.5, in women 1:1.1).

What is the reason for this phenomenon? Of course, the more highly qualified rating in which a woman is working does not of itself increase the productivity of domestic work. However, qualified professional labor promotes the formation in women workers of businesslike qualities such as organization, precision and initiative, and it enhances the importance of free time. It is quite possible that these features, acquired and mastered in production, are manifest also in the domestic aspects of life, in particular in a desire on the part of a woman to rationalize housework, order and intensify housework, and increase its productivity. This is precisely why qualified women workers make more extensive use of modern domestic appliances that raise the productivity of housework, than low-qualified women. Thus, in 1978 in Taganrog, 94 percent

of families of polled women workers engaged in qualified labor had refrigerators, while the figure for the families of women workers in low-qualified work was 89 percent; for vacuum cleaners the figures were 56 and 44 percent respectively, and for washing machines 82 and 70 percent respectively. Assessing these indexes, we must bear in mind that the existing differences in the possession of these domestic appliances are seen in conditions of high availability for the families of Taganrog women workers regardless of their qualificational level. Suffice it to say that the average figures for the entire country are 86 families out of every 100 for refrigerators, and 29 and 70 out of every 100 for vacuum cleaners and washing machines respectively.\* Thus, a high availability of electrical domestic appliances capable of improving the productiveness of housework is today a typical feature of the domestic situation among families in Taganrog. This circumstance is connected with the fact that, evidently, in the families of women workers, regardless of qualifications, the level of material sufficiency is virtually identical, and since it is expressed in the indexes for per capita income, is about R100-R106 per family member per month. The size of mean per capita income achieved and the insignificant differences in families of women workers engaged in labor that is different by nature result in a relatively high availability of electrical domestic appliances in these families. Notwithstanding, as can be seen from the figures cited above, the domestic economies of qualified women workers are somewhat better equipped with domestic appliances than are the families of low-qualified women workers. It should be thought that the reason for this phenomenon is the higher level of education and general and professional standards typical of the women workers engaged in qualified labor. A desire to have an ordered household and to "compact" and "compress" time spent on housework and extend the possibilities for meaningful leisure is today typical of qualified women workers more so than for low-qualified women workers.

It is not, however, only the greater availability of electrical domestic appliances that helps qualified women workers to spend somewhat less time on housework compared with low-qualified women workers. The availability of municipal services at places of residence is not insignificant in improving the productivity of housework. Material from the Taganrog studies shows that women workers in qualified labor live in somewhat more favorable conditions in terms of availability of municipal services compared with the families of low-qualified women workers. Thus, 44 percent of women workers engaged in unqualified work and 47 percent of qualified women workers have municipal services available at their places of residence (gas, city water, central heating); residences without any municipal services are occupied by 29 percent low-qualified and 26 percent highly qualified women workers. Evidently, in trying to retain qualified workers, enterprises give them first choice of modern, well-appointed housing. As a result, low-qualified workers frequently turn find themselves in less comfortable living conditions. Moreover, as already mentioned, older people predominate among low-qualified women workers. They often live in old housing which, as a rule, does not have modern municipal

\* "Narodnoye khozyaystvo SSSR v 1980 godu" [The USSR National Economy, 1980], p 406.

services. Thus, among low-qualified women workers polled in Taganrog city, about half are women aged above 45, and of these, about half live in their own houses, which, as a rule, are poorly supplied with domestic conveniences, or in not very well appointed communal apartments.

Of course, in the near future the differences associated with different degrees of comfort in housing will be increasingly reduced as the result of intensive housing construction and reequipping and providing municipal services in older residences. During the period 1960-1980 alone, the number of apartments in the country with city gas increased from 3.3 million to 55.4 million, or by a factor of almost 17; and this made it possible to raise the number of residences with gas to 79 percent. At the same time, in urban localities, city water supplies are available in 89 percent of state and cooperative residences, city sewage in 87 percent, and central heating in 86 percent.\* In the near future all housing will be supplied with up-to-date domestic services.

The ability to organize time rationally enables qualified women workers to make their leisure more meaningful and in some sense more balanced. It can be seen from a direct comparison of time budgeting by women workers in the two groups shown in table 4 that women engaged in more complex labor give more attention to reading and active leisure, engaging in sport, participating in tourist activities and trips outside the city, and being more selective about which television programs they watch. Qualified women workers spend about one-tenth of their free time visiting the cinema, theaters and exhibitions and engaging in sports and tourist activities. Meanwhile, among low-qualified women workers only 5 percent of time is spent on these activities.

A greater interest in reading is reflected not only in time spent but also in the creation of home libraries, which more than half of the families of qualified women workers have (against 40 percent for low-qualified women workers). This is also indicated by the proportion of families subscribing to newspapers and journals: 96 percent of women workers engaged in complex labor and 88 percent of those engaged in less interesting work subscribe to newspapers; the figures for journals are 66 and 58 percent respectively.

The desire for more interesting and active leisure is also seen among the families of qualified women workers in Taganrog by the fact that they possess more radios, tape recorders and sports equipment than the families of women workers engaged in unqualified work. Given virtually the same per capita income, as mentioned above, of women workers engaged in complex work, 63 percent have radios, while among the families of women workers engaged in less interesting work the figure is 53 percent; the figures for tape recorders are 52 and 38 percent respectively, for cameras and movie cameras 21 and 11 percent respectively, and for various kinds of sports equipment, 27 and 19 percent respectively. Of course, these differences in the possession of cultural and sports accoutrements are connected largely with the presence of children in the families. Transistor radios, tape recorders, and movie

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\* PRAVDA 24 June 1981.

cameras, and also various kinds of sports equipment, are largely elements of youth culture and they are most often acquired by families in which there are children. In Taganrog city, children are growing up in 67 percent of families of qualified women workers and 54 percent of families of unqualified women workers. At the same time, it seems that the general cultural atmosphere within the family and the level of education and qualifications in the parents are just as important. It is precisely this circumstance that is often decisive in the spiritual education of children and in forming in them their cultural requirements and orientations. In this connection it is of interest to note that 7 percent of families among Taganrog women workers engaged in qualified labor possess pianos, while the figure for the families of women workers in unqualified work is 5 percent.

Of course, these differences are not great. Nevertheless, taken in aggregate with the possession of radios and tape recorders they point to a somewhat more marked trend toward interesting cultural pastimes typical for qualified workers than for the unqualified.

The level of professional-production standards exerts a definite effect on the formation of spiritual requirements in a worker. Thus, for women workers engaged in qualified labor, a growing liking for the cinema and theater is typical. During the year preceding the study, one-third of them (against one-fifth among women workers in low-qualified labor) visited the theater. During the month preceding the poll, 55 percent of qualified women workers and 45 percent of low-qualified women workers visited the cinema.

It is curious that an interrelationship is observed between the nature of work and the range of personal contacts in free time. Employment in qualified labor, in most cases engendering satisfaction with work, creates a favorable climate in the labor collective and an atmosphere of friendly interpersonal relations. It is not fortuitous that one-third of qualified women workers polled pointed out that they spend their free time within a circle of work comrades, while among low-qualified women workers, the figure is only one-fifth.

The nature of the everyday cultural life and leisure of women workers engaged in interesting, qualified labor points to the force of the effect of professional-production culture in the worker on his or her entire way of life. A high general and professional culture gives birth to a requirement for interesting and varied leisure and the transformation of free time into "space" for the development of the personality.

This does not mean, however, that in the domestic sphere as a whole, including the daily domestic conditions of qualified women workers, all problems connected with their leisure and development and the rearing of children have already been resolved. One has only to look at the figures cited above for time budgeting to see that today's domestic load on women, regardless of the level of complexity in their professional activities, is 2.5 times greater than the amount of time spent by men on domestic activities; this obviously is not in accord with the social requirements and ideals of developed socialism. The total labor load on women workers is still 70 hours a week. The intensity

of their cultural life is correspondingly reduced and their opportunities for professional growth are restricted; and this leads to a situation in which their qualifications lag substantially compared with working men.

The economic and sociocultural development of mature socialism is creating favorable opportunities for further improvement in women's labor and domestic situations and their entire way of life. But these opportunities do not come about spontaneously. Their transformation into reality requires active and purposeful actions on the part of state, public and economic organs and all intelligent members of society.

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## DEMOGRAPHY

### DEMOGRAPHIC CHANGES, IMPACT ON LABOR DISCUSSED

Moscow KOMMUNIST VOORUZHENNYKH SIL in Russian No 4, Feb 83 pp 34-39

[Article by Col V. Chekin, docent and candidate of economic sciences: "Demographic Problems and the Country's Labor Potential"]

[Text] Our homeland's principal wealth are literate people who are self-sacrificing and unreservedly devoted to the cause of communism. "The foremost productive force of all humanity," V. I. Lenin wrote, "is the worker, the workingman" ("Pol. sobr. soch." [Complete Works], Vol 38, p 359). There are now 135 million persons working in the national economy of the USSR. But it is not just a question of their numbers. In the context of present-day scientific-technical progress the qualitative characteristics of the country's labor resources are taking on ever greater significance. In 1970 65 percent of the persons employed in the national economy of the USSR had higher and secondary education (complete and partial). In 1980 their share exceeded 80 percent, and moreover one out of every 10 of that number was a VUZ graduate. We should note that more than 37 percent of our country's population is involved in one form of training or another.

Changes of this kind in the country's labor potential are having a beneficial effect on the qualitative composition of the Soviet Armed Forces. At present all enlisted men in the army and navy have higher, secondary or partial secondary education, more than 84 percent of draftees have particular technical specialties (in 1924 less than one-fifth as many). Our homeland's armed forces today possess notable personnel. "Soviet officers," Marshal of the Soviet Union D. F. Ustinov, USSR minister of defense, has emphasized, "are distinguished by their devotion to the party and the people, the high level of their political ideology, the breadth of their view, their level of education, their sophistication and their professional skill."

The advent of new weapons has necessitated higher military-technical training of our personnel than previously. About 70 percent of the officers now have higher military and specialized military education. There has been an increase in the relative share of engineering and technical personnel in the USSR Armed Forces. Whereas in 1940 they represented 16.3 percent of the entire officer corps, in 1954 the figure was 28.4 percent, and now it is higher than 50 percent, and in the Strategic Missile Forces it is more than 75 percent.

The CPSU course set toward comprehensive intensification of social production provides for optimum use of the production potential. The decisions of the 26th party congress and the November (1982) Plenum of the CPSU Central Committee emphasized that under the conditions of the eighties it will become especially important to be thrifty and economical with labor resources. This is a complicated matter, it demands successful solution to many problems of an economic, technical, social and educational nature.

As we know, the country's labor resources are made up of able-bodied Soviet people between the ages of 16 and 54 for women and 16 and 59 for men, as well as USSR citizens who are actually working outside those age limits.

In the period between the two censuses in 1970 and 1979 the growth of the USSR population was stable, averaging 0.92 percent per year, which is higher than in many capitalist countries. The average annual population growth in the 1970-1978 period in the United States, say, was 0.85 percent, in Italy 0.7, in France 0.65, in West Germany 0.2, and in England 0.1 percent.

Our population has increased in every union republic. Moreover, the growth was higher in Central Asia and Kazakhstan, in the Azerbaijan and Armenian SSR's.

But the consequences of the war, the increased employment of women in social production, and the process of urbanization have brought about a number of adverse demographic consequences. As a result there has been an appreciable drop in the birth rate in a number of the country's regions. To this we should add that undesirable migration of the population has occurred, many young couples are planning small families, and so on. These circumstances are creating an acute situation with labor resources in the 11th and subsequent 5-year periods. There are a number of circumstances which can explain this. A very high level of employment of labor resources has been achieved in our country. What does that mean? Whereas in 1960 78 percent of the population able to work participated in production or was attending school, and in 1981 the figure was 94 percent. This level of employment is close to the maximum possible level and is far higher than in the advanced capitalist countries. In certain Soviet republics, in LaSSR, say, it is still higher--96 percent.

For a long time the country's national economy developed primarily in an extensive manner, receiving the manpower it needed in a sufficient quantity for the sectors of the economy. There were many young people coming of working age. This source was guaranteed by the natural population growth. The personnel of industry and a number of other sectors were also replenished by the flow of manpower from agriculture. People employed in the household and in subsidiary private farming operations represented a large reserve.

But recently the situation has changed essentially. For all practical purposes the able-bodied population employed in the household and in private farming consists only of those who have small children as well as mothers with many children and persons near pensionable age. The possibility of bringing them into social production is, of course, very limited.

At present the outflow of manpower from agriculture is negligible. After all, the share of young people has clearly dropped in many kolkhozes and sovkhoses.

The main and essentially only source of manpower for the USSR national economy consists of young men and women coming of working age. For instance, in the 1961-1965 period about 30 percent of the entire growth of labor resources occurred through natural population growth; in the 1966-1970 period 57 percent, in the 1971-1975 period 88 percent, and in the 1976-1980 period 93.3 percent.

Economic development in the USSR in the eighties will take place under relatively complicated demographic conditions resulting from the remote consequences of the war. For instance, at the outset of the eighties men and women born 60 and 55 years ago, respectively, will be retiring. These were the years after the end of the Civil War. They were distinguished by the highest birth rate. Thus sizable groups of workers will be leaving production. And who will come to replace them? Young people born approximately 20 years ago, or at the beginning of the sixties. Yet at precisely that time the birth rate in the country was the lowest (the consequences of the Great Patriotic War had their effect). This means that the young generation will be extremely small. As a result the overall growth of the population of working age will shrink.

Calculations show that whereas in the 9th and 10th Five-Year Plans 5 out of 10 young people entering upon independent work life replaced those retiring on old-age pensions, in the 11th and 12th Five-Year Plans the figure will be 9 out of 10.

In the 1981-1985 period the total absolute growth of the able-bodied population will be about 3.3 million persons, and in the 1986-1990 period somewhat less. But we should note this gratifying phenomenon: the composition of labor resources with respect to sex, which underwent enormous changes related to the war, is righting itself. In 1959 there were 9.6 million fewer men of working age than women, and in 1970 the difference was 2.5 million. By the outset of the 11th Five-Year Plan, these figures had drawn even for the first time in the entire postwar period. In 1985 the share of men in the country will increase still more. This undoubtedly has substantial economic and social significance. More men will be entering the national economy. Many occupations unfavorable for the female organism will be "turned over" to them.

In the eighties men and women will be retiring who mostly had a low level of general education. The working conditions of that time (the war years, the initial postwar period) did not allow them to obtain education and to acquire high skills. Areas of unattractive work requiring a low level of skill will be "laid bare" in social production when they leave. Consequently, the fact that the older generation will be replaced by young people with a higher level of education, greater geographic mobility, faster adaptability to contemporary production and new technology is taking on particular importance. Thus the qualitative renewal of labor resources could not be better suited to the demands of the economy's transition to the predominantly intensive mode of development, which will make it possible to mitigate the acuteness of demographic problems.

Greater attention is being paid to a number of specific peculiarities related to use of the labor of young people. For instance, it is becoming more necessary to improve and refine the vocational guidance of schoolchildren. Quite recently young people's choice of a particular type of work activity was essentially haphazard, empirical, by "the method of trial and error." Contemporary production demands a different approach. When educational work with people is slack, this gives rise to a whole number of adverse phenomena of both an economic and moral nature.

It is well known that scientific-technical progress is giving birth to a multitude of new occupations. Unfortunately, instilling in workers a desire and love for a particular specialty is not always organized in a businesslike and creative way by any means. But it is extremely important to help people in good time to choose their occupation so as to take into account not only their general and specialized training, but also their purely human attributes: character, inclinations, and psychological features. It is a question of fruitful explorations in the fields of psychology, physiology, industrial hygiene and industrial economics. The unification of these disciplines to form a new scientific direction--ergonomics (the interdisciplinary study of people under the specific conditions of their activity in present-day production)--has yielded appreciable results. Now the interrelationships between man and technology have become much more complicated, and ergonomics is called upon to "eliminate" the conflict in the "technology--man" system, to adapt them better to one another.

These arguments also apply directly to work in the military. It is just as important that a young soldier know an occupation which suits his inclination and which he would master with absorption and fervor. But it must be admitted that commanding officers, political education workers and party activists do not always make a thorough and comprehensive study of the characters, inclinations and partialities of the soldiers.

Soviet and foreign experience also shows that taking into account the requirements of ergonomics in developing, say, automated systems and other pieces of equipment makes it possible to increase their efficiency by 5-10 percent, to reduce by approximately one-fourth the time of occupational training of specialists, and to make their work more meaningful and interesting.

It is characteristic of the present demographic situation that the country's population has "aged" appreciably. If the population grows by 1 percent a year, then the number of pensioners increases 3-4 percent. On the one hand this means an increased load on the population of working age, and on the other it requires relatively more expenditures for social security.

The plan of the USSR's socioeconomic development in the 11th Five-Year Plan outlines measures related to further mechanization and automation of production and extensive use of the advances of scientific-technical progress. But at present reduction of manual labor is still going slowly in industry and agriculture. Almost half of the work force in physical production at the present time is employed at manual operations. We should also note this circumstance. Whereas the labor of 74 percent of the workers in the principal production operation has been mechanized, in auxiliary operations the figure is

only 29 percent. This reveals large opportunities for making manpower available. We will give just one figure. If the same outlays were made in auxiliary production as in the principal production operation, it would be possible to make three times as many people available.

The role of scientific management is important in strengthening the labor potential. Its planned and comprehensive performance in the 11th Five-Year Plan will make it possible to reduce the need of the USSR national economy for manpower by 3.9 million persons.

The diverse use of the labor of retired persons is a very substantial pool of manpower in our country. The majority of them are excellent specialists enriched by many years of experience. Their knowledge and practical habits can still bring no small benefit to various sectors of our national economy.

Of course, one cannot but take into account regional differences in the use of labor resources. In the republics of Central Asia and Kazakhstan the geographic and social mobility of the population employed in the household is low: it still does not take very well to industrial labor. Under these conditions it is correct, as for example in UzSSR, to build new production capacities--enterprises, shops and affiliates--in small cities and villages. This makes it possible to attract many thousands of their inhabitants into the sphere of material production.

The shortage of manpower is felt with particular acuteness in those regions of West Siberia and the Far East where the country's main fuel and energy base is taking shape, where mighty industrial centers are being built. Even now they are playing an important role in the USSR economy, and in the future their importance will increase many times over. Construction and development of the zone of the BAM [Baykal--Amur Main Rail Line] and development of the Russian Nonchernozem Zone represent nationwide national economic tasks of that magnitude. That is why attracting able-bodied people here from a number of regions, in particular from Central Asia, is becoming extremely necessary and at the same time figures as an important school for people's civic and interethnic training.

Improvement of the economic mechanism, raising labor productivity and strengthening work discipline will contribute enormously to successful solution of the demographic problems. The November (1982) Plenum of the CPSU Central Committee called particular attention to this. The main thing, it emphasized, is to speed up the work of refining the entire sphere of guidance of the economy--management, planning and the economic mechanism. It is necessary to create conditions--both economic and organizational--which will stimulate productive work of a high standard, initiative and enterprise.

Unfortunately, work time losses in production are still large. Meanwhile, one minute of work under present conditions on the scale of the entire country represents the daily labor of 250,000 persons. Recorded work time losses in industry alone are equivalent to the work loss if tens of thousands of persons were absent every day.

Reduction of personnel turnover, creation of work collectives in which "a fire is set" under the feet of idlers, scrapmakers, and those who like to scrounge as much as they can from the state and give it as little as they can, is another major reserve for raising labor productivity.

"Poor work, idleness and irresponsibility," Comrade Yu. V. Andropov, general secretary of the CPSU Central Committee, emphasized in his speech at the November (1982) Plenum of the party's Central Committee, "should have the most direct and irreversible effect on material rewards, on official status, and also on the moral prestige of workers."

The problems of strengthening discipline are also urgent ones for the army and navy. Under their specific conditions only a high level of organization and the procedure called for in service regulations make the soldier's work effective and fruitful. Only in a well-organized military collective do people have perfect mastery of their job, do they thoroughly know the combat equipment and weapons, and work creatively, with a full output of their energies.

Thus the situation that has come about presupposes a vigorous demographic policy, which rightly figures as an integral part of the socioeconomic policy of the Soviet state. The entire set of various economic, social and other measures is having a substantial impact on the course of demographic processes in our country.

The 26th CPSU Congress not only noted the importance of broader studies of these vitally important problems. It set specific tasks toward whose performance an effective demographic policy must be aimed, in particular: strengthening the family, creating the best conditions for combining motherhood with active participation of women in work and public activity, longer length of life and longer working years of the Soviet people, and a strengthening of their health.

We would also like to identify these directions of demographic policy in the USSR. In our country the state is constantly extending aid to families with many children, public and family rearing of children are optimally combined, the position of working mothers has been made easier, differences in the standard of living of families as a function of the number of children are diminishing, and favorable conditions are being created for the lives and homemaking of newlyweds.

For working mothers who have total longevity of at least 1 year and also for women attending school fulltime partially paid leave has been instituted to care for an infant until he reaches 1 year of age. In addition, in addition to this leave, a woman is granted additional unpaid leave at her request to care for a child until he reaches 1.5 years. A state lump-sum benefit has been instituted in the amount of 50 rubles for the birth of the first child and 100 rubles for the birth of the second and third children.

The decisions of the 26th CPSU Congress called for creating opportunities for women who have many children to work a short workday or short workweek, according to a sliding schedule, as well as at home. The Soviet state is

improving production conditions for women. The All-Union Scientific Research Center for Protecting the Health of Mothers and Infants began its activity in the USSR in 1979. A broad program of measures to create conditions for working women so as to better combine occupational activity with the rearing of children has been outlined for the eighties.

Reduction of the expensiveness of articles for children is also characteristic of the Soviet Union. For instance, many baby foods and articles of children's clothing and school supplies are sold to the population below cost. For example, fabrics are being released to the garment industry to make children's clothing at a reduction of 20-50 percent. Every year the state's subsidies for children's clothing alone amount to 1 billion rubles.

The network of children's institutions is constantly expanding in the USSR. More than 14 million children are being reared in them. Nearly 11 million pupils are attending extended-day schools or are in extended-day groups. In summer Pioneer camps alone more than 12 million schoolchildren enjoy rest and recreation every year. In the 11th Five-Year Plan preschool institutions will be built with a capacity of at least 2.5 million.

Experience in carrying out these and other measures shows that under socialism the state has realistic capabilities of exerting influence on demographic processes. It is now mainly a question of preventing a drop in the birth rate, of creating conditions which would make it possible for families to have more children without substantially lowering their standard of living as compared to families without children.

It is legitimate to say that the problem of the birth rate is the problem of the third child. Why is this so? In some places the opinion still prevails that it is necessary to have two children for simple reproduction of the population. This is not so. The reason is that for reasons of health not all women can become mothers, nor do they all get married. For these reasons simple reproduction of the population requires not two children per family, but more. According to the calculations of the well-known Soviet demographer B. Uralis, simple reproduction of the population requires that the married couple have on the average 2.65 children, or to put it more properly, 265 children for every 100 couples.

Recently, however, there has been an ever more notable desire to have no more than one child in the family. Consequently, in regions where the birth rate is still low, the conditions have to be created to guarantee its rise.

The materials of the 26th CPSU Congress have emphasized that intensification of production and a rise of production efficiency possess not only the aspect of production and economics, but are also imbued with a specific concern about the Soviet man, about his needs and requirements, which is the party's main concern. Optimum use of the country's huge labor potential is an indispensable condition for intensification of production and a pledge for the further growth of the wealth of society and the comprehensive spiritual development of the Soviet people.

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## DEMOGRAPHY

### CORRECT EVALUATION OF DEMOGRAPHIC DATA STRESSED

Moscow VESTNIK STATISTIKI in Russian No 2, Feb 83 pp 7-16

[Article by R. Dmitriyeva, candidate of economic sciences, chief of the Department of Population, Health and Social Welfare Statistics of the USSR Central Statistical Administration (CSA), and A. Volkov, candidate of economic sciences, chief of the Demography Department of the Scientific Research Institute of USSR CSA: "The Tasks of Population Statistics and Demographic Research"]

[Text] The Basic Directions for the Economic and Social Development of the USSR over the period of 1981-1985 and up to the year 1990 have called for conducting an effective demographic policy, whose purpose is to help strengthen the family, create better conditions for combining motherhood with active participation of women in work and civic activity, improve the support of children and disabled persons at the expense of society and implement a system of measures to strengthen the health of the Soviet people.

In order to successfully carry out demographic policy government decrees have been issued and specific measures have been defined for strengthening state aid to families with children, to develop the people's health care, physical education and athletics, and to improve the conditions for rest recreation.

The effectiveness of demographic policy lies in creating favorable social conditions for reproduction of the population which are conducive to optimum realization of the intentions of families with respect to the number of children. Reduction of the morbidity rate of the population, lengthening the active period of life, and eliminating premature mortality also contribute to improved reproduction of the population and to optimization of its growth.

Management of demographic processes by conducting a demographic policy, like the management of social processes in general, can be effective if it is based on a thorough knowledge of the objective patterns of demographic processes and takes into account their peculiarities under the specific conditions of the place and time.

The principal task of population statistics is to analyze changes of demographic processes under the impact of socioeconomic factors. It is responsible for furnishing an objective description of the situation that has come

about by means of a system of indicators and up-to-date methods of demographic analysis, of the differentiation of demographic processes as a function of regional, ethnic, occupational and other social peculiarities, and also of the causes and factors of demographic phenomena and the degree of influence which the measures of demographic policy are having on them.

A scientifically sound demographic forecast has great importance to the country's bodies of leadership and planning agencies; the quality of that forecast, other things being equal, depends to a considerable degree on the thoroughness of analysis of the tendencies which have come about in demographic processes.

As is well known, very great success has been achieved in the years of Soviet power in reducing the morbidity and mortality rates, especially the infant mortality rate, and in increasing the average length of life, thanks to radical socioeconomic transformations, the rise in the material well-being and cultural level of the people, and the development of health care.

The radical change in the status of women in the family and society, the growing employment of women in social production, the rise in their educational and cultural level, and the profound transformation of families and of marital and family relations--all of this has inevitably brought about a drop in the country's birth rate. Given the peculiarities of socioeconomic and cultural development, various regions and groups of the population accomplish the transition to the new type of reproduction characterized by a low mortality rate and low birth rate, at different times and at different rates. It is accordingly an important task to evaluate the prospects for completion of that transition in those areas and groups of the population where it is still continuing, and at the same time discern how the birth rate will change in those population groups where its level is lowest and is causing concern about the prospects for demographic reproduction.

It is equally important to correctly assess the tendencies of the future change of the mortality rate and in particular to show in which population groups and by virtue of what factors its further decrease is possible.

A special place is occupied by the study of the demographic development of the family as the most important social unit and, in particular, the primary unit in reproduction of the population. It is important to ascertain the peculiarities of family formation in the present stage, the causes of the insufficient stability of some families, and the interrelationship between consolidation of the family and normalization of the process of reproduction of the population.

Over the last 20 years reproduction of the population has in practically all parts of the country experienced an indirect impact from the demographic consequences of the war. This was manifested in the fact that in the sixties age-classes of people born in the years of the war when the birth rate was low entered those ages which are most productive in the demographic sense, and in the seventies those in those age groups were the already numerous age classes born in the postwar years. These structural changes have left their imprint on the dynamic pattern of many demographic indicators. That makes it an important task to distinguish in analysis between the influence of those structural shifts and the actual changes of demographic processes, to evaluate the

scale of influence of structural changes on the future course of reproduction of the population.

It is also very important to analyze the differentiation of the demographic processes themselves and to thoroughly study their relation to the peculiarities of socioeconomic development of specific population groups. There is a need in this connection to study relations not with any particular factors (for example, income or living conditions), but with the entire interrelated set of living conditions, or, in a broader sense, with the way of life, which determines demographic behavior and thereby certain levels of the birth rate, death rate and marriage rate. This approach presupposes not only the framing of meaningful hypotheses on the influence of living conditions and the way of life on demographic awareness and demographic behavior, but also the development of procedures for comprehensive evaluation of this influence.

The actual study of the social factors of demographic processes is possible at the level of the family, which is why more detailed study of the demographic development of the family is taking on importance. But at the same time it is important to know how these factors will be manifested in vital statistics in general and changes in the size and composition of the population. But this requires improvement of procedures, one of which is the multivariant analytical forecast. By comparing the dynamic pattern of the size and composition of the population in connection with different suppositions about the character of future changes of the birth rate and mortality rate, it is possible to get a clearer idea of the degree of influence of specific conditions on reproduction of the population.

In the 10th Five-Year Plan an important step was taken toward expanding and integrating statistical information about the population. The basic statistical effort in those years was preparing and conducting the 1979 All-Union Population Census, which gave a strong impetus to development of the entire system of population data.

The materials of the census made it possible to compile a fuller conception of the social and demographic composition of the population and have served as the basis for various calculations and studies. For the first time in the postwar years information was obtained on the distribution of the population by various categories of marital status, which affords the possibility of a better understanding of the results of the process of family formation and its prospects. Descriptions were also obtained of the birth rate in various social and demographic groups (distribution of women by the number of children they have had). A very detailed study has been made of the composition of families, in particular of the distribution of families by types, which affords the possibility of tracing changes relative to 1970 which have taken place in the composition of families and to evaluate the scale of those changes. A number of basic census tables were obtained for groups of cities with respect to the size of their population.

In order to use more completely the data on the census sheets an additional 5-percent sample was taken from the census materials and worked up with respect to a number of indicators and then compared to the basic workup of the data.

It yields information necessary for more detailed study of the social and demographic composition of families and of the peculiarities of the composition of certain other social and demographic groups.

As of 1 January 1979 additions were made in the primary documents for recording vital statistics--birth and death certificates, marriage and divorce certificates, and detachable slips for statistical recording of the movement of the population, as well as the expanded program for processing data from these documents. For purposes of interlinking the data of the population census and current recordkeeping and for broader elucidation of social characteristics of demographic processes the program for keeping vital statistics and detachable slips for statistical recording of the movement of the population has been supplemented in the necessary cases by new questions such as level of education, family situation, length of stay in the town of permanent residence, etc.

Expansion of the recordkeeping program also requires a change in the data processing program. The annual report on natural population growth, because of the transition to electronic processing, will accordingly contain not only the traditional tables, but also information on newborn infants with respect to the characteristics of the parents--level of education, length of stay in the town of permanent residence, etc.; on deceased persons--with respect to level of education, family status and length of residence; on those getting married and divorced--with respect to level of education, length of stay in the town of permanent residence, and the number of children together. A program has been analogously envisaged for processing data on migration of the population.

This has made it possible to obtain new and more detailed descriptions of demographic processes by combining data from the census and current records. It has thus become possible to study differences in the death rate as a function of marital status, differences in the birth rate as a function of the time of residence in the given town (that is, indigenous population and newcomers). Information on the social and demographic composition of migrants and on migration of families has been obtained thanks to the fuller use of information on detachable slips for statistical recording of migration of the population.

Mutual adjustment of programs concerning death certificates of infants under 1 year of age and birth certificates can serve as a vivid example of the fruitfulness of this kind of integration. As is well known, figures on infant mortality are obtained by comparing the number of infants who have died not to the number of those living, as is the case with other age groups, but with the number of births, and to obtain figures on individual groups these groups must be identified both in the data on deaths and also in the data on births. Coordinating the programs of birth certificates and death certificates has made it possible to survey infant mortality by specifically processing the certificates and obtaining characteristics of the mortality rate of infants under 1 year of age with respect to the age of the mother, the number of the mother's previous childbirths, nationality, level of education and the nature of the mother's work.

The inclusion of new questions in the documents for recording vital statistics affords the possibility of making current calculations of the composition of the population, say, with respect to nationality, marital status, and length of permanent residence. A commission of the Scientific Methodology Council of the USSR CSA has examined and approved a method for current calculation of the composition of the population with respect to marital status and nationality. With the transition to electronic processing of data on the natural growth and migration of the population it becomes feasible as a practical matter to make such calculations.

Sample surveys play an important role in studying the social factors that have a bearing on demographic phenomena. The regular collection of data on the marriage rate and birth rate among age classes of women in one-time surveys of income and housing of the families of workers, employees and kolkhoz members has been a substantial achievement of the Soviet statistical service. Beginning in 1972 this information has been collected every 3 years. The virtue of it is that the surveys contain a number of socioeconomic and demographic data items that make it possible to obtain information on the birth rate for social and demographic groups, specifically as a function of the mother's level of education and nationality, the size of urban settlements, marital status, and so on. The surveys include a question on the anticipated number of children, which affords the possibility of studying the dynamics and differentiation of demographic behavior. These data have particular value because of the possibility of their use in forecasting the birth rate. The Scientific Research Institute of the USSR CSA has developed and successfully applied a method of forecasting the level of the birth rate from the data of these surveys. The program for processing the data of the 1978 and 1981 surveys also called for obtaining detailed data on the marriage rate and divorces in age classes of women.

At the same time definite success was achieved in the 10th Five-Year Plan in the field of processing demographic data using up-to-date equipment--in the population census a census sheet was used along with a technical data carrier, and a new technique was used for recording the responses with graphic marks. This afforded the possibility of reducing expenditures of time and energy coding the census materials and using special reading devices for inputting the data into the computer.

The first phase of the electronic data processing complex has already been put into service; it calls for calculation of mortality tables, birth rate tables, current calculations of the age- and sex-specific composition of the population and a demographic forecast. In the present stage it is becoming especially important to develop and perfect a system of demographic statistical indicators. At the present time the Scientific Methodology Council of the USSR CSA has developed and approved systems of indicators on migration and indicators of the marriage rate (including termination of marriage); it has become necessary to devise analogous systems of indicators on the birth rate and death rate. It should be borne in mind in this connection that some of the indicators envisaged by these systems have not yet been furnished the data of statistical observation. That is why it is becoming important further develop and perfect programs of current records, censuses and one-time surveys. While

comprising a unified system, they must afford information that is sufficiently detailed and fully comparable both with respect to categories of the population recorded and also with respect to the most important social and demographic cross sections.

Flexibility must be an invariable characteristic of the observation programs and systems of indicators. It is impossible to imagine, much less count on devising any sort of universal set of indicators that would once and for all cover the needs of description and analysis of demographic processes. The demographic situation changes, the population changes, and the conditions of people's lives influencing demographic processes change, and that rather rapidly. As our understanding of the motive forces and factors of demographic development becomes more profound, new hypotheses are advanced which need to be verified, new phenomena are detected which have to be studied. In addition, the growing needs of scientifically sound management of social processes (including demographic processes) are raising new questions which the system of information that has taken shape under different conditions is not always able to answer.

To give a specific example, there is no dispute that demographic processes depend on socioeconomic factors, on the standard of living, or, more accurately, on the entire way of life. That is why we relate specific changes, say, in the birth rate or marriage rate to the influence (though not always direct) of changes in living conditions and the way they are reflected in people's consciousness. But in connection with conducting an effective demographic policy it is no longer sufficient to make such general observations. We have to know how specific governing influences such as, say, certain benefits related to getting married, giving birth to a child, and so on, are reflected in living conditions and how they influence demographic processes. It is clear that data of this kind does not have to be recorded for the entire population, nor need the observation be constant. Nevertheless, they must comprise an organic part of the entire system of information concerning the population and demographic processes. And that means developing methods of studying phenomena of this kind, methods of collecting the relevant data, which, along with data on the facts, ought to provide room (to a greater extent than in the past) for data on conceptions, intentions and guiding principles. The experience that we have in studying them both within the state statistical service and also in scientific institutions is convincing as to the usefulness of studying the social-psychological aspects of demographic behavior for working out reference points that will be reliable in management. A broad field of interaction between demographic statistics and social statistics is being discovered in this area.

For a number of years research of this kind has been conducted successfully on the basis of information collected in one-time income and housing surveys of the families of workers, employees and kolkhoz members. This valuable experience should be broadened and deepened. At the same time there is an evident need for a series of specific surveys on a small scale to study individual and partial aspects of the shaping of "demographic consciousness."

We need to note at the same time that the informative capabilities of the existing recordkeeping documents are not always fully utilized. For example, the program for processing data on births as a rule calls for grouping births only with respect to two characteristics: age and some other characteristic (the mother's schooling or nationality, and so on). The introduction of other more elaborate combinations of characteristics--for example, the grouping of births with respect to characteristics of both parents simultaneously--would make it possible to obtain a more clear-cut idea of the social factors in the birth rate. Since 1979 the death certificate has recorded the decedent's length of stay in the town of permanent residence. Appropriate processing of these data might shed light on differences in mortality rate between migrants and the "immobile" population.

All of these possibilities could be fully utilized in connection with the transition to centralized computer processing of the data of current records, but small-scale additional analytical treatment of this kind could be conducted even by local statistical agencies as part of current analytical work.

The new tasks require further refinement of demographic forecasting.

Above all this means expanding the number of indicators which are to be forecast. The Soviet statistical service has acquired a great deal of experience in making future calculations of the size of the population and its age- and sex-specific composition. These calculations are done on the basis of a thorough determination of the probable changes in the birth rate and death rate for age groups and afford results sufficiently close to reality. Now it has become quite necessary to make analogous estimates of the anticipated composition of the population with respect to marital status and also the anticipated number of families and their distribution with respect to size, which is especially important in the light of the tasks of evaluating the effectiveness of demographic policy. Such calculations are, of course, much more complicated, since one has to take into account not only people's passage from one age group to another, but also the movement from one marital status category to another. Moreover, even tendencies in the change of marital status of the population have not been studied by any means as fully as would be necessary; not enough information has as yet been furnished for such a study. Nevertheless, the experimental calculations made in that direction afford the basis of hoping that this problem can be solved.

Another direction of effort in this area is improvement of forecasting methods for specific geographic units (cities, rayons). Elaboration of interrelated population forecasts for particular geographic areas is a peculiar feature of our demographic statistics. This task is being performed successfully for certain union republics and certain oblasts, but inevitable difficulties are encountered when it comes to cities and rayons. The reason is that the smaller the geographic area, the more the changes in the size of the population and its composition depend on migration; however, a forecast of the population is especially important for those areas and settlements where intensive development of the productive forces is envisaged and where flows of migrants ought to be directed. Thus a demographic forecast for small geographic areas inevitably involves improvement of the study and forecasting of migration.

Forecasting the population of small separate areas also requires solving certain problems of method. When future calculations of the population are made, it is customary to take into account a change in the birth rate and death rate by age groups, and for that purpose birth and mortality tables are calculated for each area, and certain assumptions are also made about the pattern of change of the age-specific indicators of these processes. For small areas the possibilities of calculating these tables are limited both by the amount of work that is required and also by the fact that such tables calculated for a small population may not even give a correct idea of the actual patterns of change of the birth rate and death rate, especially if the composition of the population is undergoing rapid changes. Particular importance is thereby being attributed to demographic regionalization, to calculation of some kind of standard tables suitable for areas with similar conditions, and also to devising methods of "relating" these tables to specific areas on the basis of certain simple indicators. Both the procedure for constructing the standard tables and also selection of the general indicator which would afford a basis for applying one or the other of the standard tables to a given area require specific research.

It is a shortcoming of the existing methods of demographic realization that they are oriented toward similarity of levels of demographic processes at some particular moment in time, whereas it would evidently be more correct to seek such a similarity in the character of change of the demographic processes, especially if we take into account the subsequent use of the results of the regionalization for purposes of extrapolation.

An equally important problem of the forecast is the procedure for compiling it. In the forecasts which are now made for specific areas consideration is given not only to possible changes in the birth rate and death rate, but also migration. The forecast net result of migration is included in the calculation of the future anticipated size of the population. However, for any area the size of the growth of the population based on migration depends both on the forecast development of production in it and also on the extent to which the present and planned need of that production for manpower is met and can be met by local labor resources, taking into account their growth in the planning period, skills, the rise of labor productivity, and so on. It would therefore be natural to make a two-step demographic forecast: first, without taking into account migration or assuming its existing flows, and then to take into account the growth based on migration, which would correspond to the necessary growth of labor resources. In that second stage it would also be possible to take into account possibilities for redistribution of labor resources from other regions and accordingly, if necessary, adjusted plans for development of production in a given area. This approach, in our view, is a better response to the demand advanced at the 26th CPSU Congress of ensuring balance between jobs and existing labor resources.

It is accordingly very important to study the interrelationship between migration and reproduction of the population. It is relatively uncomplicated, if we know the age- and sex-specific composition of the migrants, to estimate the influence of migration on the composition of the population at the migrants' point of origin and destination (this could also be an interesting topic of

study in its own right). Yet it is more important to know how migration affects the levels of the birth rate and death rate, in other words, how the birth rate and death rate among the migrants differ from those of the "immobile" population. It is very likely that those who migrate could differ from the population both at their point of origin and at their destination with respect to their marital status as well as state of health, and also with respect to social characteristics. The pattern of their reproduction may be altogether different, and, in addition, the very fact that they are changing their place of residence involves a change of occupation, change of workplace, change of living conditions, and perhaps for that reason has an impact on the demographic behavior of the migrants. A study of these patterns is quite an urgent matter.

In accordance with the measures of the USSR CSA on Further Improvement of the State Statistical Service, which arise out of the decisions of the 26th CPSU Congress, the Department of Population, Health and Social Welfare Statistics intends in the 11th Five-Year Plan to carry out a set of interrelated efforts aimed at making economic analysis more profound.

The department has planned the preparation of reports devoted to problems of strengthening the health of the Soviet people. These are reports on the morbidity rate and mortality rate of individual diseases (the circulatory system, neoplasms, etc.), and also reports of a summary nature: for example, "On the Length of Life of the Population," "On the Demographic Situation in Rural Localities," "On the Change in the Size of the Population and Demographic Processes" and "On Natural Population Growth."

At the same time provision has been made for preparing reports on aspects of the development of health care (on progress in carrying out the decrees of the CPSU Central Committee and USSR Council of Ministers No 870, dated 22 September 1977 and entitled "On Measures To Further Study Protection of the People's Health," and No 773, dated 19 August 1981 and entitled "On Additional Measures To Improve Protection of the Health of the Population"), treatment in sanatoriums and health resorts and the rest and recreation of the workers (on progress in fulfilling the decree of the CPSU Central Committee, USSR Council of Ministers and AUCCTU No 7, dated 7 January 1982 and entitled "On Measures To Conduct Further Study of Treatment in Sanatoriums and Health Resorts and the Rest and Recreation of the Workers and Development of the Network of Trade Union Health Centers"), on development of physical education and athletics (on progress in fulfilling the decree of the CPSU Central Committee and USSR Council of Ministers No 890, dated 11 September 1981 and entitled "On a Further Increase of Mass Involvement in Physical Education and Athletics").

Improving the quality of analysis with respect to these questions, along with maximum use of the data of current reporting, broader processing of records on vital statistics, and demographic tables, will be accomplished by bringing in the results of one-time surveys and above all through broad application of the data of one-time income and housing surveys of the families of workers, employees and kolkhoz members, which contain detailed treatments with respect to aspects of the birth rate and marriage rate.

On the basis of a sample survey of the composition of mental patients in hospitals in Moscow, conducted jointly with USSR Minzdrav [Ministry of Health], the effort will continue to study the causes of mental illness. The analysis will also use the material of a one-time survey of the operating schedules of outpatient and polyclinic institutions, by means of which it is possible to ascertain how fully medical, especially preventive, service in the evening and on Saturday meet the need of the public. The data of a one-time study of the quality of outpatient and polyclinic service to the public will help to analyze more thoroughly the state of medical service to the public. The results of a study of the influence of environmental pollution on health will help in undertaking an assessment of the state of health of the population.

The material of a sample survey of the number and composition of pensioners (with respect to sex, age, year when pension was awarded, etc.) substantially broaden opportunities for analyzing these data; at the same time they can be used to carry out a broad set of measures to improve the system of social security.

Additional opportunities for analysis are afforded by the newly introduced state reporting on sanatoriums and preventoriums, making it possible to analyze both the existing network of sanatoriums and preventoriums in a cross section by ministries as well as the results of recovery in preventoriums of the workers of systems of various ministries and departments. Elaboration of reports on sanatoriums and institutions for rest and recreation, containing relevant data on family rest and recreation and treatment of parents with children, affords the possibility of analyzing development of the network of these institutions so that measures can be taken to expand the possibilities for parents to obtain rest and medical treatment together with their children.

The quality with which primary record documents are filled out and the reliability of the initial data are assuming great importance, especially as the transition is made to processing demographic data on computer.

Checks which have been run in recent years on the quality of compiling the second copy of the documents in vital statistics and the detachable slip for statistical recording of migration indicate that there is a need to improve the quality of record documents.

In the recording of natural population growth in recent years emphasis has begun to be put more and more on the questions of the quality of recording--completeness of filling out certificates, correctness of recording the age of the deceased and causes of death from the physician's death certificate, which is used as the basis for documentary recording of death, etc. The reliability of recording social and demographic characteristics such as level of education, marital status, type of work, is equally important, especially in cases when the records are based on statements by applicants. In most union republics control checks of the completeness and correctness of recording births and deaths have become more thorough and presumably more effective than in previous years. Extensive use of medical documentation and thorough analysis of all the information obtained make it possible for the agencies of the state statistical service to detect the infractions that have occurred, and to have

a basis for taking up the question of eliminating these infractions with the respective ministries and departments.

As the transition is made to passports for the entire population, it is becoming especially important to ensure that complete and reliable records are kept on migration. At the present time work has begun to check coverage of the recording of such population categories as students from other cities not living in dormitories, workers and employees arriving for temporary employment, and so on. At the present time plans call for paying particular attention to checks in rural soviets of the completeness of recording arrivals and departures.

Performance of the important tasks of improving demographic statistics presupposes a vigorous creative effort by all units in the respective branches of the state statistical service and close interaction between local and central authorities.

Supervision and assistance of local statistical agencies on matters of economic analysis of demographic processes represent one of the most important directions in the work of the Department of Population, Health and Social Welfare Statistics of the USSR CSA. Much attention has been paid in recent years to improving the quality of summary letters and reports of the central statistical administrations of the union republics. By means of the summary letters, conferences and everyday contacts the department turns the attention of local statistical agencies toward treatment of the most urgent topics for the given area, toward thorough analysis of demographic processes taking place, toward extensive involvement of data of related branches of statistics, and toward joint projects and presentation of reports with interested ministries and departments. The punctuality of the preparation of data is also very important: the data of annual reports must be analyzed immediately after receipt. The summary letters usually give examples of incorrect use of indicators, of tardiness in analyzing annual reports, of repetition of one and the same topics, and of a lack of attention to certain demographic problems which have urgency for the republic.

A series of articles on methodological questions is being published in the journal VESTNIK STATISTIKI in order to raise the level of analytical work on the questions of population statistics in local statistical agencies, and there will be later additions. They will reflect the problems of the statistics of marriage, divorce, length of life, causes of death, etc.

A further rise in the level of analytical work on the questions of population statistics will contribute to successful fulfillment of the measures arising out of the decisions of the 26th CPSU Congress and the May and November (1982) Plenums of the CPSU Central Committee.

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